

LeClerc Creek Allotment  
Range Report  
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The LeClerc Creek Allotment is located in the southeast portion of the Sullivan Lake Ranger District. The allotment area includes Forest Service lands encompassed by the following watersheds; Middle Branch LeClerc, West Branch LeClerc, Fourth of July, Seco, Whiteman, Mineral, and Redman Creeks. The permittee authorized to graze on this allotment is Fountain Ranch Partnership. This allotment is currently permitted for cattle and has developments to support this type of use.

Grazing areas within this allotment consist of a mix of habitats which provide livestock foraging areas. There are two major types of forage producing lands that are present on the Colville National Forest and within the LeClerc Creek Allotment. They are semi-permanent range and transitory range.

Semi-permanent range is land that can produce forage on a sustained basis over periods of 20 years or longer. These semi-permanent range areas are predominately open forests with some mountain grasslands, mountain meadows and homestead meadows and form the core of most grazing allotment foraging areas. In the past, semi-permanent range was further divided into primary and secondary rangelands. Primary rangelands are the semi-permanent range areas that livestock naturally graze first under a current management practice. It includes the accessible areas that have available water and will be grazed to allowable levels or beyond before livestock significantly graze other parts of the allotment. Secondary rangelands are the semi-permanent range areas, which under the existing management and improvement level, are significantly grazed only after the primary range has been grazed to proper use or beyond. Accessibility, lack of water, and/or present management system can be reasons for a secondary range designation.

Transitory range areas are created following timber harvest or fuels treatments where overstory trees and shrubs are removed and herbaceous understory vegetation is able to establish and flourish due to increased sun light and decreased competition. Transitory range areas are temporary in nature and are able to produce available forage for a period of 3 to 20 years before trees once again dominate the site. Transitory range areas are used and managed in conjunction with semi-permanent range areas and act to provide additional forage for livestock and wildlife and reduce pressure on riparian areas by providing for upland foraging sites.

There are also many homestead meadows within the LeClerc Creek Allotment that were created during the homesteading era by clearing and seeding formerly forested areas to provide valuable

foraging areas for livestock. Many of the existing homestead meadows on the Colville National Forest came into federal ownership many years ago and have been managed to provide forage for permitted livestock and wildlife. Homestead meadows within the LeClerc Creek Allotment are considered to be semi-permanent rangelands.

## Management Framework

Where consistent with other multiple use goals and objectives there is Congressional intent to allow grazing on suitable lands. (*Multiple Use Sustained Yield Act of 1960, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, National Forest Management Act of 1976*)

It is Forest Service policy to continue contributions to the economic and social well-being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood. (FSM 2202.1)

Broad scale management direction for Colville National Forest grazing allotments is contained in the current Colville National Forest Land and Resource Management Plan which states:

1. Management of grazing by domestic livestock will be guided by project level allotment plans. The development of these plans will be integrated with the needs associated with use and values present in the area. All associated uses and values will be considered, with special consideration given to: (1) fish and wildlife habitat needs; (2) timber harvest and cultural activities; (3) riparian values; (4) recreation use; and (5) threatened, endangered and sensitive species. Further considerations are contained as other resource standards and guidelines in this section of the plan (Forest Plan page 4-44).
2. Coordination requirements....will include: (1) timing of the timber harvest and associated activities and grazing schedules; (2) protection of livestock barriers or mitigation of these values where desirable; (3) reducing the spread of noxious weeds where present; (4) seeding of livestock and wildlife forage species, considering desirability of seeding palatable and non-palatable forage species and species competitive with tree production; and (5) livestock-wildlife conflicts (Forest Plan page 4-45).

As provided in the 1988 Forest Land and Resource Management Plan, the allowable use levels in upland areas is 45% for forest lands and 55% for grasslands in satisfactory condition.

Interagency Technical Reference 1734-3, Utilization Studies and Residual Measurements (USDA 1996), considers these levels of use to be "Moderate" use. The technical reference mentioned above classifies utilization by grouping a range of potential utilization observations to form categories of use. The use categories are displayed below.

**Table 4. Forage Utilization Categories**

Category	Percent Utilization
No use	0 to 5 percent
Slight	6 to 20 percent

Light	21 to 40 percent
Moderate	41 to 60 percent
Heavy	61 and above

Individual direction regarding the implementation of grazing in the LeClerc Creek Allotment is found in Allotment Management Plan (AMP) that was last issued in 1982. The AMP for the LeClerc Creek Allotment is tiered to the Colville National Forest Land and Resource Management Plan (1988) as amended by the Inland Native Fish Strategy (INFISH) Environmental Assessment (1995).

Grazing instructions and direction are provided to permittees annually and specify the pastures to be grazed, the season of use, numbers of authorized livestock as well as other items. Documents that provide this annual instruction and direction have had different names over the years that have included Annual Operating Plan (AOP), Annual Operating Instruction (AOI) or annual turnout letters. Currently these documents are untitled, but do provide annual direction on how livestock use is to occur. The information contained in the annual plans is based on information contained in the most recent AMPs, changed physical conditions, any relevant monitoring information and/or other NEPA decisions that may affect grazing rotation schedules.

## **Desired Future Conditions**

The Colville National Forest Land and Resource Management Plan desired future condition for the Forest in ten years states that livestock grazing will be more intensively managed. Livestock use will stay within the established use rates. Permittee control will be at an adequate level and, overall, more intensive management systems will be employed. All allotments will emphasize riparian habitat protection and/or recovery (Forest Plan 1988 page 4-63).

## **Existing Condition**

Existing conditions and historic data for the LeClerc Creek Allotment was gathered using archived range permit files, GIS data, field review, photos, and monitoring data.

### **History**

The National Forest System Lands that make up the LeClerc Creek Allotment were purchased through the Resettlement Administration during the Great Depression in 1935-1936 and given National Forest status in 1938. The area was extensively logged in the early 1920's and experienced extensive fires in 1929. The LeClerc Creek Allotment has documented grazing use back to 1940, but livestock grazing likely occurred in the area long before that since homesteading in the area occurred from approximately the 1890s to the 1930s. Prior to 1940 sheep grazed the allotment, at which point range inspections determined that the allotment was better suited to cattle use and has been grazed by cattle since. In the past the allotment was jointly grazed by multiple permittees, but is currently managed by only 1 permittee. The allotment was originally one large, contiguous unit but in 1966 the East Branch was excluded from the allotment because all the primary range within that portion of the allotment was privately owned. Fourth of July Creek was then managed as a separate allotment until

approximately 1977 when it was added back to the LeClerc Creek Allotment as a pasture. The Dry Canyon Pasture was originally administered as 2 allotments, with the upper portion of the pasture being a cattle allotment and the lower portion being a sheep allotment. The two were combined in approximately 1945 and managed as a cattle allotment until approximately 1977 when Dry Canyon was incorporated into the LeClerc Creek Allotment as a pasture.

While Forest Service Term Grazing Permits authorize a specified stocking rate of livestock, the way forage production of the ecosystem is measured is the Animal Unit Month (AUM). An AUM is defined as the amount of forage required to feed a 1,000 pound cow for a one month period. Stocking rates are determined by assessing the production capacity of the lands within the allotment, and the stocking rate set so that forage consumption will not exceed the production capability of the ecosystem. Historic stocking rates were somewhat variable, especially in the 1930's through the 1950's. These variations were due to changes in the allotment size that occurred over the years which affected the carrying capacity (the maximum stocking rate possible while maintaining or improving vegetation or related resources).

Private land leases and their associated Term Private Land Grazing Permits have also varied throughout the history of this allotment. A Term Private Land Grazing Permit authorizes additional AUM's for private lands within the allotment boundary; the stocking rate for those private lands must be determined by the land owner and a grazing lease issued from the land owner to the Forest Service grazing permittee. The Forest Service can then issue a Term Private Land Grazing Permit that specifies the kind and class of livestock, permitted numbers and season of use for the private lands within the allotment. Without a grazing lease from the land owner, the Forest Service has no authority to issue a Term Private Land Grazing Permit so permittees must provide proof their grazing leases with private land owners in order to maintain their rights under the Term Private Land Grazing Permit. Holding a Term Private Land Grazing Permit in conjunction with a Term Grazing Permit allows the permittee to graze the National Forest System (NFS) lands and private lands in unison. As an example; if a permittee holds a Term Grazing Permit for 80 cow/calf pair and a Term Private Land Grazing Permit for 20 cow/calf pair they can graze 100 cow/calf pair total on the allotment, and the entire 100 cow/calf pair may be present on either NFS or privately owned lands within that allotment. This allows a simplified way to manage both NFS and private lands within an allotment without the need to fence the private land and manage it separately. The permittee is still responsible for meeting livestock grazing standards on the NFS lands within the permit per the terms of the Term Grazing Permit; the FS has no jurisdiction or authority to enforce grazing standards on privately owned lands. That responsibility falls with the private land owner and is an agreement between the permittee and the land owner exclusively.

There was a Term Private Land Grazing Permit for the LeClerc Creek Allotment up until 2000. At that time the private land owner (Stimson Lumber Company) chose not to continue to lease their lands to the Forest Service grazing permittee, which voided the Term Private Land Grazing Permit. Prior to cattle turn-out for the 2001 grazing season, the Rangeland Management Specialist at the time conducted an analysis of vegetation and past grazing use and determined that the NFS portion of the allotment was capable of sustaining the full permitted numbers, which were 101 cow/calf pair for the Term Grazing Permit and 37 cow/calf pair on the Term Private Land Grazing Permit for a total of 138 cow/calf pair. A permit modification was executed authorizing 138 cow/calf pair to be grazed under the Term Grazing Permit, with the

condition that this increased stocking rate would be monitored and re-evaluated in 4 years to determine if the effects were within acceptable limits. When the re-evaluation period arrived in 2005, the Rangeland Management Specialist position had been abolished and the terms of the permit modification authorizing the temporary increase in stocking rate were not understood. This error was realized in 2010 when the Term Grazing Permit was being evaluated for renewal with a new permittee. At that time the decision was made to continue to authorize grazing at only the level of the previous Term Grazing Permit (101 cow/calf pair). Currently the allotment is authorized for 101 cow/calf pair or 535 AUMs to be utilized between June 1 and September 30.

Historic permitted stocking levels for the lands that make up the current day LeClerc Creek Allotment are summarized below in table XX. Note that these numbers are the permitted levels, which includes both private and NFS lands within the allotment. Also of note is that some years full or partial non-use may have been authorized; however the years that non-use was authorized are difficult to determine with the records available. Records prior to 1964 are not available.

Year	Stocking Rate	AUM's
1964-1965	152	805
1966	154	815
1967-1977	147	778
1978	187	990
1979	147	778
1980	115	609
1981	197	1043
1982-1989	191	1011
1990-1991	131	694
1992-2009	138	731
2010-2014	101	535

Table XX. Historic use summary.

This allotment is likely experiencing legacy effects from historic higher stocking rates, and may also be experiencing legacy effects from having different classes of animals (sheep) graze on the allotment in the past. Though it is known that some of the lands within the LeClerc Creek Allotment were historically grazed by sheep, it is not known how many animals were permitted or how many years sheep grazing was authorized.

**Current Management** The LeClerc Creek Allotment is categorized as a Cattle and Horse (C&H) allotment with 101 cow/calf pairs authorized to graze from June 1 to September 30 each year. The allotment is managed using a deferred rotation grazing strategy with 5 pastures.

Current Pasture Designations	Acres	Percentage of Allotment	Season of Use	Approximate Use Level
Lower Bunchgrass	5621	28	6/15 – 7/15	Moderate to Heavy <sup>1</sup>
Upper Bunchgrass <sup>2</sup>	6691	11	7/16 – 9/30	Moderate
Mineral Creek <sup>2</sup>	5603	24	7/16 – 9/30	Moderate

Dry Canyon <sup>3</sup>	3037	13	10/1 – 10/15	Light
Fourth of July <sup>3</sup>	2460	24	10/1 – 10/15	Light
TOTAL	23,412	100		

- 1- Lower Bunchgrass pasture as a whole has moderate use. However, isolated areas of high use can result when cattle drift back to this pasture after the pasture off-date.
- 2- In the past Upper Bunchgrass and Mineral Creek pastures were grazed separately. Over time as fences became difficult to maintain and vegetation changed, the permittee started managing these pastures as one unit.

Late season use was split between the Dry Canyon and Fourth of July pastures prior to 2012. Starting with the 2012 grazing season use in Fourth of July pasture was discontinued due to limited access, making it hard to get cattle off the pasture at the end of the season.

The current management strategy is a deferred rotation grazing schedule, but lack of effective barriers to cattle drift over time (both from natural degradation and from changes in the landscape due to timber harvest) have created porous allotment and pasture boundaries that cannot effectively contain cattle, resulting in cattle drift. Of particular concern is the late season drift of cattle back into Lower Bunchgrass pasture after this pasture has already been grazed as well as cattle drift off the allotment along the East Branch LeClerc Creek road (1934000) and the predominantly privately owned lands around Scotchman and Caldwell Lakes. The Forest Service recognizes these shortcomings, and the permittee has worked diligently to move stray cattle as directed by the Forest Service as well as to locate and move cattle on their own. The Forest Service has determined to implement the current deferred rotation grazing strategy as best as possible until new or better solutions to more effectively manage the allotment and control cattle movement could be properly analyzed through the NEPA process.

Several homestead meadows provide valuable forage for livestock and wildlife within the LeClerc Creek Allotment. Homestead meadows are areas that were cleared of timber during the homestead era to provide a home site, then tilled and planted to provide forage for livestock. These homestead meadows are generally located adjacent to water sources such as streams. Some of the homestead meadows on the Forest were maintained into the 1980s by removing encroaching trees, burning, tilling and reseeding these areas to maintain their productivity. Conifer tree encroachment into the original cleared area of homestead meadows is occurring at varying degrees within this allotment, and is decreasing the amount and quality of upland foraging areas provided by meadows. Additionally, noxious weeds are present in many of the homestead meadows within the allotment, further decreasing the amount and quality of available forage. Grass species commonly found in homestead meadows include Kentucky bluegrass, orchard grass, Timothy and red top.

### **Range Improvements**

Existing range improvements for the LeClerc Creek Allotment consist of ten livestock management fences totaling approximately 14 miles and 2 corral/loading chute facilities. The fencing was put in place in order to create allotment and pasture boundaries. The first range improvements on this allotment were constructed in 1975, and construction / reconstruction of improvements continue as the need arises. Range improvements identified in the Term Grazing Permit are maintained annually by the permittee. All range improvements deteriorate as they age

and may require reconstruction when annual maintenance is no longer capable of keeping them in working order.

There are no developed water sources within this allotment, so cattle water at streams and undeveloped springs within the allotment. This lack of off-stream water causes cattle to concentrate in riparian areas, which is exacerbated later in the grazing season as upland forage cures and becomes less palatable. This has led to areas with higher than desired impacts to stream banks and riparian/wetland soils, such as a decrease in riparian plants and an increase in exposed soil that often washes into the stream. Refer to the soils report (Jimenez 2014) and hydrology report (Lawler 2014) for more information

#### LECLERC CREEK IMPROVEMENTS

Improvement Name	Type of Improvement	Condition Rating	Length (ft)
Dry Canyon Drift Fence	Fence	Good	0.2
Caldwell Lake Drift Fence	Fence	Good	0.5
Diamond City Drift Fence	Fence	Good	1.5
Hanlon Mtn Drift Fence	Fence	Fair	0.75
Hanlon Meadow Holding Pen	Fence	Good	0.75
Middle Branch Drift Fence	Fence	Fair	0.75
Lower Bunchgrass Drift Fence	Fence	Fair	1.5
Mineral Creek Drift Fence	Fence	Poor	1.5
Old 4 <sup>th</sup> of July Drift Fence	Fence	Poor	1.25
E Branch LeClerc Drift Fence	Fence	Good	5.75
Dry Canyon Corral/Loading Chute	Handling Facility	Good	N/A
Diamond City Corral/Loading Chute	Handling Facility	Good	N/A

There are also two exclosure fences not represented in the above table that are maintained by District wildlife staff and/or the Kalispel Tribe of Indians, as well as 2 sections of newly constructed fence along the west side of Middle Branch LeClerc Creek in T36N R44E S20 and T36N R44E S16 that are not included in the above inventory of range improvements.

Despite the existing fencing on the allotment that was intended to discourage cattle drift (movement of cattle into an area, such as a previously grazed pasture, that is undesired or uncontrolled), there are areas on the allotment where cattle drift is a recurring problem. For the life of the allotment, lack of natural barriers and timber harvest activities on private lands within and adjacent to the allotment and pasture boundaries have also contributed to the drift problem, which makes keeping the cattle in the prescribed pasture during the prescribed season of use difficult at times. The permittee has been diligent in locating cattle that have drifted out of the pasture identified in the rotation schedule on the annual turnout letter and moving them back to the correct pasture. Stray cattle have been located equally as often by the permittee through routine allotment inspections and by FS personnel working in the area.

#### Vegetation

The LeClerc Creek Allotment is a mix of many habitat types and aspects. There are areas of denser timber on north facing slopes that provide few foraging areas for livestock. Most livestock foraging areas in the allotment are found in naturally open areas, homestead meadows

and open canopy timber stands that provide transitory rangelands. Elevation within the allotment ranges from approximately 2,500 to 6,700 feet.

Most of the allotment is timbered with major tree species being ponderosa pine, lodgepole pine, white pine, Douglas fir, grand fir, western red cedar, hemlock, Engelmann spruce and western larch (see Appendix A of scientific names).

Principle forage species within the allotment include Idaho fescue, Bluebunch wheatgrass, Kentucky bluegrass, redtop, orchard grass, timothy and pinegrass. Shrubs found on the allotment which appear to furnish browse for livestock and wildlife are; redstem ceanothus, serviceberry, snowberry, ninebark and oceanspray (see Appendix A of scientific names).

Usable forage available for wildlife and livestock is 50 percent of the total forage produced (CNF Land and Resource Management Plan 2-12, 1988). Of the 50 percent available to livestock and wildlife, 45 percent is available to livestock. This equates to 22.5 percent of the total forage produced being available to livestock. Private lands within the boundary of the LeClerc Creek allotment (or any grazing allotment) are not included in carrying capacity calculations since the Forest Service can not authorize grazing on private lands. There are currently 5,452 acres of land that are suitable for grazing within the LeClerc Creek Allotment. The 5,452 acres for the existing condition was developed by taking the total acres of suitable grazing for the existing allotment (6,693 acres) and subtracting 1,241 acres on the upper elevations of Molybdenite Ridge that receive little to no grazing use and therefore do not contribute greatly to the carrying capacity of the current allotment, despite meeting the criteria for being suitable for grazing.

There is a lack of sufficient data to allow a quantified, best-available science based analysis of rangeland vegetation condition or trend to be performed. Due to this lack of data the only assessment available to determine rangeland condition or trend must be based on professional judgement, which is drawn from a combination of knowledge and observations made in the field. For this project, the following coarse scale assessment which is based on the Parker 3-step assessment methodology will be utilized:

<b>Condition Class</b>	<b>Percent of Potential Natural Community</b>
Poor	0-25%
Fair	26-50%
Good	51-75%
Excellent	76-100%

As determined by the Rangeland Management Specialist, rangeland vegetation appears to be in fair to good condition, with no apparent trend. Trend is not able to be evaluated without at least three reference points available and is difficult to impossible to determine based solely on professional judgement.

### **Existing Condition Summary**



The LeClerc Creek Allotment is a cattle and horse grazing allotment that is currently managed by a single permittee and supports 101 cow/calf pair with a grazing season of June 1 to September 30. Grazing within this allotment occurs in correlation with the Allotment Management Plan that was established in 1982. According to past and recent monitoring information grazing use over most of the area is occurring at acceptable levels and within the specified use levels. Monitoring is conducted either at the end of the grazing season or the end of the growing season. All monitoring information for the LeClerc Creek Allotment is retained at the Newport Ranger District; it is a part of the project file and available upon Freedom of Information Act (FOIA) request.

This allotment has livestock management fences to support livestock grazing. Most of the range improvements are in good condition with a few in fair or poor condition. A lack of off-stream livestock watering facilities results in livestock drinking from streams and undeveloped springs in the area. This has the potential to impact water quality, riparian vegetation and streambank conditions on this allotment.

This allotment is characterized by having homestead meadows within its boundaries that were created between the 1890s and 1930s. These homestead meadows have been actively managed in the past to maintain them as highly productive rangelands that provide valuable forage to livestock and wildlife. Conifer encroachment and noxious weed invasion is occurring in all homestead meadows within the project area, and as a result, the open foraging areas provided by these meadows are being lost. The reduction of upland foraging sites, such as those found in dry portions of homestead meadows, has the possibility of increasing impacts to streams and riparian areas as livestock may spend more time foraging in riparian areas.

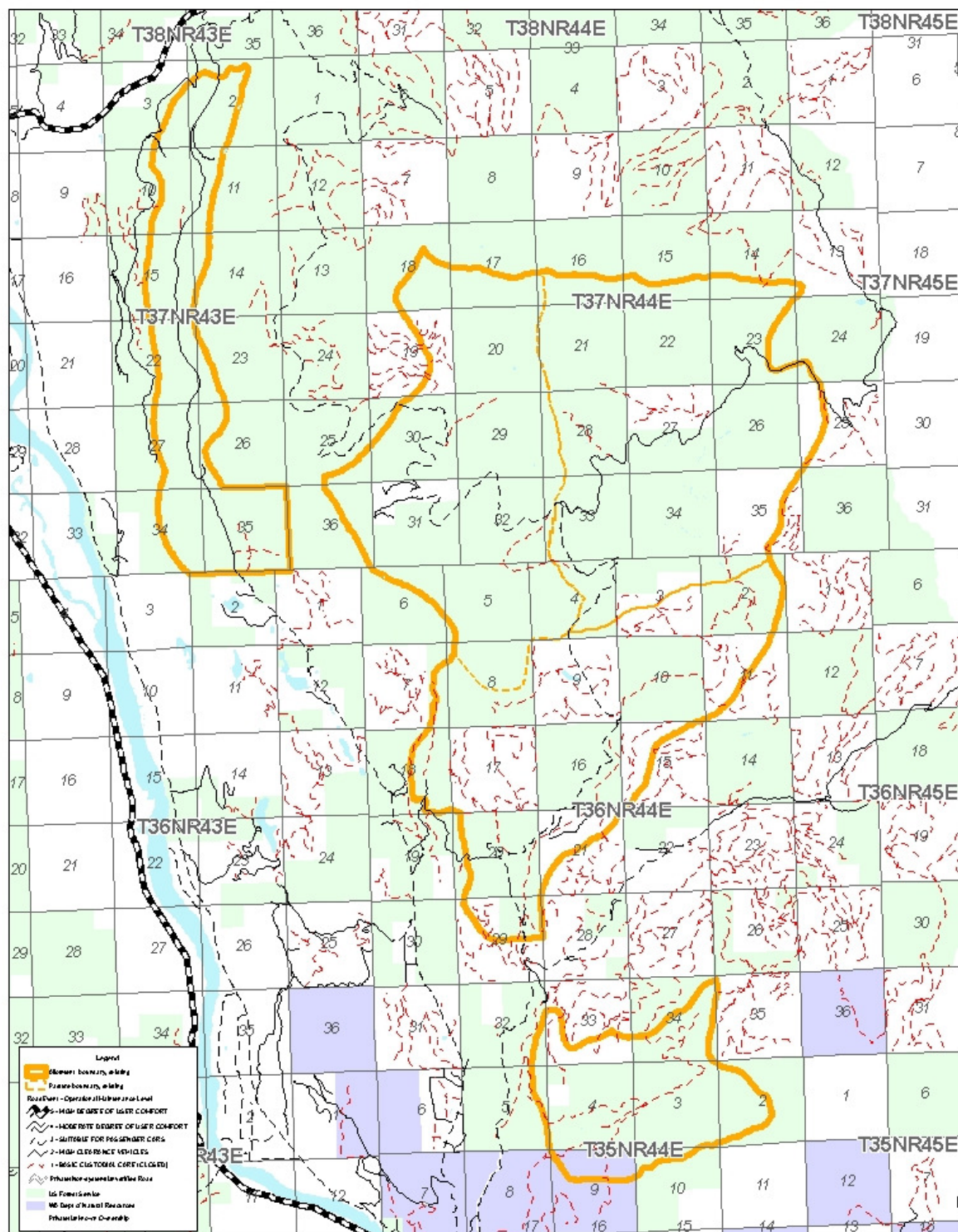


Figure XX. Map of the current LeClerc Creek Allotment.

## Effects

In combination with utilization levels, livestock impacts to upland and riparian vegetation are dependent on the season of use as it relates to timing of grazing during the growth cycles of plants. The LeClerc Creek Allotment covers a range of aspects and elevations which equates to vegetation maturing at different times throughout the growing season. Generally vegetative growth of grasses and forbs (spring green up) initiates in April, but is subdued by cold soil temperatures and night time freezing until after approximately mid-May. The formation of floral structures (early boot stage) for key forage grasses normally begins sometime near the first of June. Peak of flowering (anthesis) in key forage grasses typically occurs toward the end of June to mid-July. Seed ripe (when hard seed is produced) is usually achieved by mid-August. These growth stage dates (phenological stages) are approximations that vary with elevation and climatic conditions, and are extrapolated for site-specific areas within the LeClerc Creek Allotment to determine maximum grazing seasons of use.

The ability of native grass plants to complete their critical physiological processes during the growing season relates to plant health. Forage species must complete their annual carbohydrate storage cycle on a regular basis in order to ensure sustained plant vigor, reproductive success and survivability (Donart 1969). In this analysis of grazing impacts, the period of critical plant growth and carbohydrate storage is considered relative to expected grazing effects. Forage species are most susceptible to grazing damage from the time they begin developing floral structures (early boot) to the time they flower (anthesis) (Donart 1969). Grazing grasses in early spring while they are in the vegetative stage of growth is generally not harmful to the plant providing that it is able to complete its carbohydrate storage cycle thereafter (White 1973). Grazing after flowering, when the carbohydrate storage cycle is essentially complete, is generally also not harmful to the plant. Research by Ganskopp, Svejcar and Vavara (2006) near Burns, Oregon found that light grazing decreased fall standing crop by 32%, while heavy grazing reduced standing crop by about 67% when compared to ungrazed stands. However, the nutritional quality of the grasses increased with grazing, which provided superior forage for fall and winter use. In addition to and independent of grazing, plant health and seed production can be affected by timing and quantity of precipitation, growing season temperatures, and insects (Cook and Child 1971).

In analyzing grazing impacts, the physical and physiological effects on vegetation are considered in the context of grazing season, grazing intensity, and the duration of grazing. The analysis of grazing impacts focuses on controlling the grazing intensity, duration of grazing and or the frequency of grazing in order to mitigate grazing impacts and sustain healthy, productive plant communities (Mueggler 1974).

The National Forest System lands (NFS) contained within the boundaries of the LeClerc Creek Allotment are grazed under permit which grants grazing privileges to the permit holder. There is private property, both fenced and unfenced, within or adjacent to the boundaries of the LeClerc Creek Allotment. The lands within the project boundary have been determined to be "Range Areas," also sometimes referred to as "open range" by Pend Oreille County. The Revised Code of Washington (RCW) 16.24.010 states that within Range Areas, "it shall be lawful to permit cattle, horses, mules or donkeys to run at large." Pend Oreille County has specified that the season for the range areas within the boundary of the LeClerc Creek Allotment is from April 1 to

November 30 each year. The RCW 16.60.015 further states that it is the responsibility of the land owner to construct and maintain fencing around their property should they not want livestock to run at large on their property.

#### **Alternative A- No Change (Current Management)**

Under this alternative, permitted livestock would continue to graze the LeClerc Creek Allotment under a 5 pasture deferred rotation grazing strategy. Stocking rate would remain at 101 cow/calf pair (535 AUM's) and livestock would be rotated through the allotment as described in the table under the Current Management section on page 4 of this report. No additional range improvement projects would be constructed to improve livestock distribution or reduce livestock drift both between pastures and off the allotment. The five pasture of the allotment are depicted below in Figure XX.



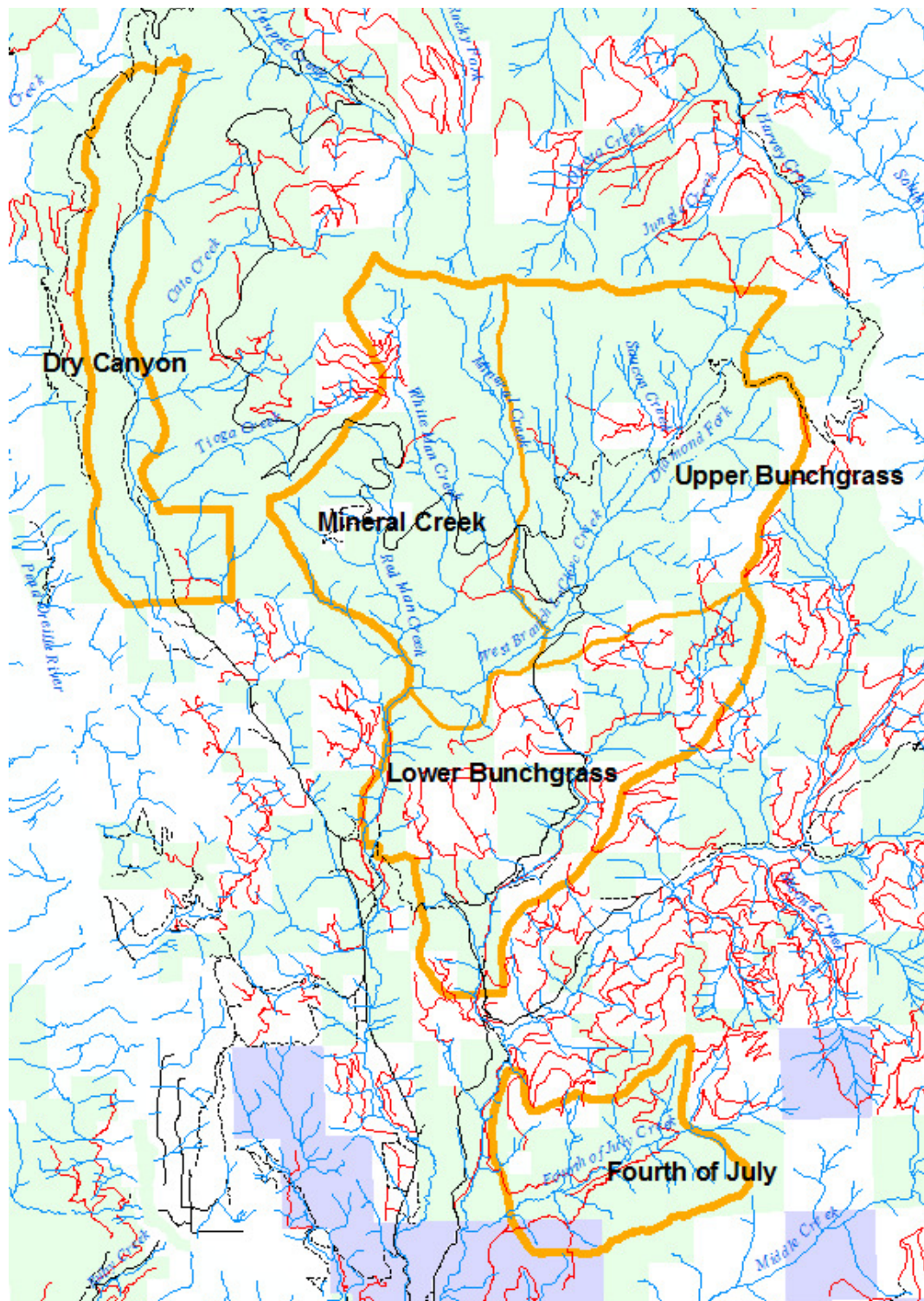


Figure XX. Current LeClerc Creek Allotment and Pastures.

### Direct and Indirect Effects

Under this alternative, permitted livestock grazing of NFS Lands would continue under the current management scenario.

This analysis does not detail optional management strategies the permittees can use to attain improved resource conditions. Some management strategies are not mandated, but administratively available to implement. They cannot be mandated through the U.S. Forest Service permit system, but some permittees have already expressed their desire to use these wherever possible to limit the amount of future fencing that could occur if stages are implemented to the fullest extent. These measures include, but are not limited to: increased riding and strategic placement of supplements, (ex: salt or nutrient blocks) which attract livestock away from riparian areas. Proper placement of mineral supplements can be an effective method in improving distribution. Livestock usually go from water, to grazing, then to salt; therefore, it is not necessary to place salt near watering areas. Livestock can be drawn to areas they would otherwise avoid by placing salt away from water (Holechek et al. 2001).

Monitoring will determine the effectiveness of an alternative's implementation on resources. Permittees are encouraged to monitor their grazing so as to be proactive in determining livestock moves.

#### *Vegetation Cover and Composition*

Vegetation is the primary component assessed in the range resource analysis. Grazing can alter composition and cover through forage utilization and the physical actions (trampling) on vegetation and soils. Vegetative composition and cover is monitored in uplands and riparian areas. Grazing management techniques (ex: range structures or improvements, adaptive management, and administration to implement) affect how livestock graze and the overall effects to resources.

Alternative A is expected to continue to maintain upland vegetation desirable state or trend. The ability to use other management options (salting, supplement placement, additional riding) are available for the permittee to use.

The mitigations of additional fences, new water developments with water source protection would not be implemented under Alternative A. Cattle would continue to water at streams and springs throughout the allotment which may cause increased grazing pressure in riparian and wetland areas. Continued grazing should not degrade the ecological trend in this allotment. Plant ecological trend is comprised in part, by plant percent composition and cover. Therefore, if the ecological trend is static or improving, it generally indicates the status of composition and cover is improving. However, localized area of high livestock impacts would be expected to persist and may show a stable or downward trend over time.

Unmanaged or improperly managed grazing can be detrimental to plant communities. This alternative has known deficiencies in infrastructure and management that contribute to improperly managed grazing. Infrastructure can be reconstructed and permit action allows for deficiencies in management to be addressed to a limited extent; without a comprehensive adaptive management strategy certain actions are not allowed without additional NEPA analysis. Plants should not show a loss of vigor or reproduction activity in upland vegetation. Thus, upland composition and cover are expected to be maintained under this alternative. Plants should not show a loss of vigor or reproduction activity in riparian vegetation when compared to existing conditions. However, lack of off-stream water does contribute to livestock spending

more time in riparian areas, particularly in the fall as upland vegetation cures and becomes less palatable and seasonal water sources dry up. This can lead to increased utilization of both herbaceous and woody riparian vegetation. Woody species that are below browse height may be suppressed and limited in growth due to browse from livestock. Monitoring data collected for the LeClerc Allotment shows that greenline stubble height standards have not been exceeded on this allotment when measured, nor has woody species browse utilization (refer to Appendix XX). Therefore, riparian composition and cover are expected to be maintained under this alternative.

Managed properly, grazing is a natural process that can maintain plant health (Bradford, et al, 2002). A plant subject to overgrazing, either by domestic livestock or wildlife species, would weaken over time. This would make it less able to grow adequate healthy roots, reducing above-ground production of leaf material and reducing its capability to store carbohydrates for the following year's growth, to withstand drought, extreme winters, or additional grazing from herbivores. A plant's ability to continue to grow healthy roots is critical to its survival. Without addressing known deficiencies in range improvements (allotment and pasture boundary fences), livestock drift between pastures and off the allotment will continue to be a management concern and will require considerable input from the permittee to locate and move cattle which have drifted back to areas previously grazed (in particular the Lower Bunchgrass pasture) or off the allotment.

Effects of livestock grazing include impacts directly to individual plants and alteration of their physical environments. Direct impacts from livestock include trampling and removal of plant materials. Indirect impacts such as soil compaction and related reduction in soil and water infiltration, soil erosion, invasive/noxious weed introduction and spread, changes in seed bank, reduction in soil litter, and effects to pollinators may occur under some grazing regimes in some areas (Stoddard et al. 1975).

Dry to moist meadow types are most likely the first plant communities to experience impacts from cattle, and have been affected by cattle grazing more than any other vegetation communities. Early in the season, when water is more abundant, cattle generally stay out of the wet meadow areas, concentrating on the dry to moist meadow vegetation. The dry/moist and wet meadow type is an important portion of the analysis area and cattle have a tendency to collect in the meadows, especially wet meadow environments. It has been shown that cattle spend more time in the riparian areas mid-late summer season than in the late spring or early summer season when they distribute their time more evenly between the uplands and riparian areas (Parsons, et al. 2003).

Meadows are often comprised of different dominant plant species. Although drier types are sometimes closely associated with wetter types, livestock may use drier areas at different times. Livestock use in spring and early summer tends to begin on the dry to moist meadow sites earlier because of accessibility. The wetter meadows are saturated at this time and inaccessible to livestock. The desirable plant species are favored during this time period.

If livestock are in meadow communities early and for extended periods of time, soils can become compacted and less able to absorb and store water. This can result in the phasing out of plants that require more water for longer periods of time, and establishment of plants that can take advantage of greater depths-to-water later in the season. An increase in bare ground and an

undesirable change in grasses and forbs increase the potential for the establishment of weedy species.

#### *Range Infrastructure/Improvements*

Grazing permittees have always been responsible for maintenance of range improvement projects and project maintenance is a term and condition of their grazing permits. Current range improvement project maintenance are displayed below. Further information on existing range improvements and their condition can be found under Existing Conditions above.

Allotment	Current		
	Fence (miles)	Water developments	Corrals
LeClerc Creek	14.5	0	2

Note- miles of fence are approximate.

Usual maintenance for projects that are in good or satisfactory condition generally requires little to be done each year. Each improvement would have to be visited at least annually to ensure it is functioning properly and maintenance would occur as needed prior to and throughout the grazing season. Despite ongoing maintenance of improvements, some improvements have degraded with age and are not functioning as intended which leads to livestock drift. Additional fencing or reconstruction of degraded fencing that is needed to reduce livestock drift would not be implemented under Alternative A.

Short term administrative actions may be used as tools to reduce livestock effects. These administrative management strategies are included in Alternative A. These actions include salting, changing season of use, change in animal numbers, change in animal class, change in the number of days available for utilization, change in the grazing system, change in trail routes, and use of riders. The flexibility to promptly implement one or more of these measures allows management to take actions improving livestock distribution and forage utilization. Again, this would lead to improved vegetative conditions.

#### **Forest Plan Compliance**

The existing conditions within the Forest Plan Standards and Guidelines have allowed for grazing on the LeClerc Creek Allotment. Grazing under Alternative A would be consistent for the management areas (MAs) within the allotments. The capable AUMs exceed the permitted AUMs proposed in this alternative. This meets resource needs and management area direction.

Specific to rangeland management, The Plan states:

1. Management of grazing by domestic livestock will be guided by project level allotment plans. The development of these plans will be integrated with the needs associated with use and values present in the area. All associated uses and values will be considered, with special consideration given to: (1) fish and wildlife habitat needs; (2) timber harvest and cultural activities; (3) riparian values; (4) recreation



use; and (5) threatened, endangered and sensitive species. Further considerations are contained as other resource standards and guidelines in this section of the plan.

2. Identify lands in unsatisfactory condition (see glossary). Develop allotment plans with specific objectives for these lands on a priority basis under a schedule established by the Forest Supervisor. These objectives will define a desired future condition based on existing and potential values for all resources. The allotment plan will include: (1) a time schedule for improvement; (2) activities needed to meet forage objectives; and (3) an economic efficiency analysis.
3. Livestock stocking levels in project plans will be determined by considerations including: (1) Forage availability, suitability and condition; (2) other resource needs as shown above; (3) demand for grazing on the allotment and other livestock forage needs; (4) permittees ability to self-monitor management and maintenance in project allotment management plans and grazing permits; and (5) economic factors including development and maintenance cost of facilities.
4. Coordination requirements in the above considerations will include: (1) timing of the timber harvest and associated activities and grazing schedules; (2) protection of livestock barriers or mitigation of these values where desirable; (3) reducing the spread of noxious weeds and controlling noxious weeds where present; (4) seeding of livestock and wildlife forage species, considering desirability of seeding palatable and non-palatable forage species and species competitive with tree production; and (5) livestock-wildlife conflicts, i.e. restrict domestic sheep grazing on Bighorn sheep range.
5. Table 4.15 (Allowable Use of Available Forage, Riparian Areas) and Table 4.16 (Allowable Use of Available Forage, Suitable Range Except Riparian Areas) the standards for utilization which will be used in preparing allotment plans in both riparian and other areas to be grazed:

Please see The Forest Plan for the tables referenced above. This alternative is expected to meet these requirements as it is designed to improve riparian conditions and an AMP is a product of the analysis.

The alternative meets the Grazing Management Objectives of PACFISH/INFISH Biological Opinion (PIBO) as applicable for this analysis. Refer to Aquatics/Fisheries report for details. PIBO amended the Forest Plan. Monitoring has shown that standards for livestock use as described in PIBO have not been exceeded, this information is incorporated by reference and is available at the Newport-Sullivan Lake Ranger Districts offices.

### **Monitoring Recommendations**

Monitoring related to range management for Alternative A would follow the methods, procedures and frequencies currently being implemented.

### **Cumulative Effects**

### *Spatial Bounding*

Cumulative effects for Alternative A are spatially bounded by the existing allotment boundary. The effects of grazing and livestock could be present throughout the allotment boundary but are most realized in riparian and wetland areas, since upland sites tend to be drier and less susceptible to detrimental impacts such as exposure or compaction of soil (see Soils report for more information).

### *Temporal Bounding*

Cumulative effects for Alternative A are temporally bounded to the time frame within 5-10 years of implementation of the decision and resolution of the objection process. No additional projects and treatments in addition to Alternative A would have large scale effects to grazing or vegetation resources within the allotment boundary. Continued timber harvest, invasive species treatment, road maintenance, and recreational activities are anticipated to be the reasonably foreseeable future events.

### *Past, Present, and Reasonably Foreseeable Actions*

Vegetation management projects such as Hanlon and Scotchman Stewardship projects have or will implement burning, thinning and other overstory vegetation management activities which overlap the allotment boundary for Alternative A. Grazing mitigation measures from these projects would be implemented. They would protect range structures from damage, increasing their effectiveness to disperse livestock over the landscape. This results in sound range practices which retain desired vegetative composition. The forage analysis for these vegetation projects did not show a great increase in forage production. The slight increase in available forage created by the timber sale projects and prescribed burning would not change vegetative composition or cover related to grazing. This alternative and the respective vegetative project mitigations are designed to not increase livestock use in riparian areas and increase livestock distribution to uplands.

Grazing with fuels reduction/prescribed burning may change species composition or cover in areas where severe or higher temperature burns alter soil productivity or noxious weeds establish. Those sites are usually patchy and small in size (often 1/10 acre or less) within large scale underburns. Frequently, those sites are rehab-seeded against noxious weeds. Therefore, the overall composition and cover typically is not affected.

Fire suppression is not expected to have an effect to vegetative composition and cover. This is due to the policy that suppression activities restore any Forest Service structures damaged by suppression activities. Effects of grazing with fire are addressed in the Fire/Fuels specialist report. Wildfire effects are evaluated after the event. Post fire the resources are considered and analyzed and activities depend upon the extent and severity of the burn. Vegetation composition and cover effects would be determined at that time. Since grazing may affect fine fuels, it may affect wildfire burn patterns (see Fire/Fuels specialist report). The change in vegetation cover and composition would likely stay about the same in site size and location. Composition might change relative to which species are fire tolerant versus those which increase without grazing.

Noxious weed treatments would continue on the allotment. Noxious Weed Best Management Practices (BMPs) would continue to be implemented in the grazing strategies. If grazing is

permitted, the Early Detection Rapid Response (EDRR) measures may be completed by the permittee. There would also be more EDRR through Forest Service range inspections. Treating noxious weeds helps recover the desirable plant composition and cover in areas where weed populations are established as well as preventing noxious weeds from further displacing desirable plants in new sites. Overall, the Forest wide weed control measures, BMPs, and active permittee participation leads to desirable plant composition and cover in the analysis area.

Firewood gathering is likely to have little, to no, effect with grazing on understory vegetation composition or cover. Rarely, a wood cutter may fell a tree across a fence, corral, or trough. If this happens, sometimes the wood cutter fixes the fence. If not, and the permittees or Forest Service finds it, the structure would be repaired as soon as possible. The time from the event to the discovery may affect the grazing plan effectiveness short term, a couple of weeks to a month. The effect is likely minor given that a more important structure is likely to be discovered promptly or at the time of its use.

Road maintenance or culvert replacement, upgrade activities have little to no effect on grazing. The machinery could temporarily displace livestock for a brief time, usually less than one hour. It is not likely to displace them into areas they can't already access.

Within the last ten years, recreation-related uses have increased in the LeClerc Creek area. Recreation has been observed as having measureable impacts to riparian areas and may increase the amount of sediment in streams. Due to recreation use combined with livestock use, some riparian areas and streams may demonstrate characteristics that are less than their potential, but impacts to these areas are likely to remain within allowable standards.

Recreation use such as camping is also having an impact to primary range areas within the project boundary. Many of the homestead meadow sites, which are considered to be semi-permanent primary range areas are increasingly used as camping locations for Forest visitors. Use of these homestead meadows by campers is causing areas of soil compaction, which in turn reduces infiltration and productivity. Heavily used areas are also less desirable to livestock.

Livestock may affect traditional cultural use of the landscape by Native American Tribes, in particular the Kalispel Tribe (see Heritage Resources report for more information). The extent and location of traditional cultural properties (TCP's) within the LeClerc Creek Allotment are not well-known by the Forest Service, therefore determining the extent of these effects is difficult.

Continuing to permit the current number of livestock on the LeClerc Creek Allotment would allow for a sustained level of livestock production for the permittees, which equates to sustaining the local economy.

Continuing the permitting of livestock within the project area could have some impact on post-harvest regeneration rates of timber on NFS and private lands. Impacts to tree regeneration have been observed to be insignificant in dry, upland areas and therefore, the impact is likely minimal.

Without addressing known management concerns identified under Alternative A such as lack of defensible allotment and pasture boundaries which leads to cattle drift and re-grazing of areas

after their proposed season of use, vegetative conditions in riparian and wetland areas may continue to be impacted by livestock and will not allow for recovery of these areas.

## **Alternative B- No Action (No Grazing)**

### **Direct and Indirect Effects**

Under the No Action Alternative, the Term Grazing Permit would be cancelled within 2 years upon implementation of the decision and resolution of the objection process. No permits would be issued for the LeClerc Creek Allotment until, or unless, there was a subsequent NEPA analysis and a decision made to re-stock the allotment. Permittees would be given two years written advance notice of cancellation of their permits as provided for under 36 CFR 222.4 (a)(1). During the two years notice prior to cancellation of the permits, livestock would continue to be managed under the current management regime for the existing permit. All other activity in the assessment area not connected to grazing would continue. Livestock use in riparian areas and wet meadows would cease and cattle would no longer graze or trample some areas along wetlands. The expected result would be a continued stable or improving trend in both upland and riparian vegetation sites, based upon the current trends in grazing monitoring. Range improvements (ex: fences and corrals) would be allowed to deteriorate and stock trails would not be maintained.

The purpose of the No Grazing alternative is to describe the resource effects of cancellation of grazing permit, with no livestock grazing taking place. Motorized access and travel management, timber management, road maintenance, recreation, noxious weed management, and fire protection would continue if this alternative was selected.

#### *Range Improvement Projects*

Range improvements including fences and corrals would remain on the allotments but would no longer be the responsibility of the permittees to maintain. Subsequent decisions would be needed regarding construction of new improvements for other resource needs such as wildlife or recreational use. Alternative funding sources for maintenance of range improvements would need to be secured if range improvements were to remain functional, or they would deteriorate on the landscape. Additionally, alternative funding sources to remove range improvements would need to be secured if this was the desired action to take. If livestock management fences and water developments are not maintained and fall into a state of disrepair, there could be negative impacts to wildlife (Rosenstock et al. 1999). Deteriorating fences could also have a negative impact on motorized and non-motorized recreation since loose wire could entangle motorized vehicles, people, horses and pets.

Private, state and other federal lands within or adjacent to the project area that are unfenced or have poorly constructed and/or maintained fences would not experience incidental livestock use from Forest Service permitted livestock as a result of the “no action” alternative since livestock grazing would not be authorized.

#### *Vegetation Cover and Composition*

Effects on upland and riparian vegetation are based upon some general assumptions. These assumptions are: 1) active prevention and control measures limit invasive plant species

introduction and/or spread, which would offset desired plant ecosystems; 2) recreational livestock use remains at existing levels; and 3) wild grazing ungulate use levels remain close to existing levels.

Upland vegetation cover and composition is expected to maintain or improve slightly. This is due to it currently meeting desired conditions. Upland vegetation, currently with a stable trend, would be expected to slowly improve to an upward trend. An upward trend is still possible given the plant ecology measures species and percent cover relative to 100%. Since 100% doesn't occur in a natural environment, the desirable condition has been met at a "Good" rating. There would still be some grazing and browsing by wildlife and by recreational livestock. The rate of improvement may accelerate because more plant material would be left on-site rather than being consumed.

There is research that indicates some species (such as bunch grasses) do not increase long term without grazing. Several articles indicate that without active removal of grass tillers (ex: grass blades) the plant becomes decadent and less healthy (Busso & Richards, 1995; Clark et al, 1998; Clark et al, 1998b). Other articles, based on professional experience, state that where permitted grazing was eliminated, long-term range ecology plots, showed a high percentage of native species presence, but increased percentage of litter (dead plant material) in plots.

Elimination of domestic livestock grazing may not be expected to lead to rapid improvement on areas that were most heavily impacted by historical livestock use. Areas where livestock gathered on moist soil types for prolonged periods and where non-desirable plant species were established may take more time to recover. Other ongoing forest uses may contribute to effects on vegetation or riparian health. Examples include, but are not limited to areas which were managed with past heavy equipment operations and subsequent seeding of Kentucky bluegrass, may have less ability to recover given less available native species present. An active road system through a meadow may continue to contribute to soil and watershed conditions preventing establishment of more desirable native plants within the community. Roadways can contribute to noxious weed spread given the propensity of plant particulates to be in the undercarriage of vehicles and roadsides provide a potential seed bed for their propagation (Mack 2003). Noxious weeds are not part of desirable plant ecosystem composition.

Plant composition and health affects fuel structure. In general fine fuels, such as grass and forbs, should increase without livestock grazing. This may serve to carry more fire in an event. Refer to the Fuels resource report for more information.

Under the no grazing alternative, herbaceous plants and shrubs would no longer be utilized by livestock. Plant productivity, diversity and species composition may change over time in absence of livestock grazing. Preferred plants with low tolerance to grazing may increase in the abundance. Plants that are grazing tolerant may become decadent and overgrown. The no grazing alternative would allow an increase in deep rooted perennial grasses within the allotment. Research by Ganskopp, Svejcar and Vavara (2006) near Burns, Oregon found that light grazing decreased fall standing crop by 32%, while heavy grazing reduced standing crop by about 67% when compared to un-grazed stands. However, the nutritional quality of the grasses increased with grazing, which provided superior forage for fall and winter use. The No Grazing

Alternative would allow forage to develop residual growth resulting in “wolfy” plants, which are not as palatable to wild ungulates (Ganskopp, Svejcar and Vavara 2006). As these plants age and continue to develop residual growth, some of that growth would become a dense mat on the soil surface known as thatch. The presence of thatch can reduce biodiversity and increase bare soil by shading out other types of vegetation. Additionally, the establishment of older non-palatable plants would occur over time, unless some type of disturbance such as fire occurred. Some wildlife prefer to feed in areas where livestock grazing has already occurred. Research indicates that early spring and winter cattle grazing may improve forage conditions for elk. Results of habitat selection analysis demonstrated that elk preferred selected feeding sites where forage residue was reduced by summer cattle grazing and avoided un-grazed sites in all three seasons. Therefore, wildlife foraging behavior and plant preference may be altered in absence of livestock grazing since forage quality may decrease.

In the absence of livestock grazing, more herbaceous vegetative material would remain on the landscape. Soil erosion that results from high intensity rain events may decrease due to the additional vegetation and vegetative litter being able to intercept rain drops and reduce their impact in open areas such as meadows and areas considered primary rangelands (Simanton et al. 1991). Areas that are under a forest canopy would likely experience no change in regards to decreased soil erosion since the tree and shrub overstories act to intercept precipitation (Wilcox et al. 1989).

Concerns usually revolve around how wildlife and livestock compete while ignoring the positive influences wildlife and livestock have on each other. Without livestock grazing on the allotment there would no longer be salting and away from riparian areas. Both these management practices are designed to promote livestock distribution and reduce impacts to the riparian resources. Minerals and supplements put out for cattle are often used by wildlife, though they would not be present in the no action alternative.

Coniferous tree encroachment would continue in the homestead meadows within the project area. In the future, many of these areas would become dominated by timber and likely unrecognizable as the open grass and forb dominated areas they are and once were. As trees continue to invade these homestead meadows, the herbaceous vegetation would become less dominant to the point it may be virtually absent due to shading produced by the tight canopy of an even aged timber stand.

Eliminating livestock grazing use within the project area may result in more bare soil in homestead meadows. Many of these areas are dominated by Kentucky bluegrass and in the absence of grazing, or mowing, this species becomes less abundant and bare soil would appear in the interspaces. This bare soil would be susceptible to erosion and noxious weed invasion. Noxious weeds would need to be controlled in order to provide opportunity for desirable vegetation to establish itself within these homestead meadows. Seeding may also be needed to prevent noxious weeds from re-establishing after treatment and dominating the site. Over time other forms of perennial vegetation may become established in the niche formerly occupied by Kentucky bluegrass and provide positive benefits such as soil and streambank stabilization and decreased bare ground.

With more herbaceous litter being present on the landscape under the no action alternative potential risk for forest fire starts may be increased under the no action alternative since herbaceous vegetation in the forest and along roads would not be grazed. The basic process of grazing reduces fuel loads by two basic concepts which are: animals remove vegetation, and thereby reduce the amount of burnable material, and hoof action incorporates fine fuels into the soil to eliminate the number of combustible materials. Therefore, the absence of livestock grazing in the LeClerc Creek Allotment would result in a greater amount of fine fuels in the project area and increase the potential for higher rates of fires spread and fire intensity.

The amount of resource monitoring occurring on National Forest Land would be decreased under the No Action alternative within the LeClerc Creek Allotment. Livestock monitoring and compliance inspections would not take place since no livestock would be present. This means less Forest Service personnel on Forest Service land to inspect road systems, locate areas of resource impacts, less public contact encounters, and less Forest Service presence.

Soil erosion may decrease under the No Action alternative due to the retention of additional herbaceous litter (Simanton et al. 1991) and a slight reduction in the amount of bare soil associated with areas of concentrated livestock use, such as trails, around water troughs, corrals and at stream crossings.

## **Cumulative Effects**

### *Spatial Bounding*

Cumulative effects for Alternative B are spatially bounded by the existing allotment boundary. The effects of grazing and livestock could be present throughout the existing allotment boundary but are most realized in riparian and wetland areas, since upland sites tend to be drier and less susceptible to detrimental impacts such as exposure or compaction of soil (see Soils report for more information).

### *Temporal Bounding*

Cumulative effects for Alternative B are temporally bounded to the time frame within 2 years of implementation of the decision and resolution of the objection process as described in 36 CFR 222.4 (a)(1), at which point grazing would be discontinued.

### *Past, Present, and Reasonably Foreseeable Actions*

Many Forest grazing permittees produce livestock to provide for their livelihood. Many permittees use the opportunity to graze livestock on National Forest System lands to allow them to grow winter feed for their cattle on their private property. Without continued authorization of grazing on Forest Service allotments such as the LeClerc Creek Allotment, permittees would have to modify their current operations, livestock numbers and grazing patterns. The effect of this would be of unknown proportions. This action could result in negative outcomes for local agriculture, local economies and local communities by further reducing business opportunities, economic opportunities and employment in Pend Oreille County by restricting grazing permittee's ranch capacities and capabilities.

Since cattle would no longer be permitted to graze on the allotments, a few mitigation measures related to other planned projects would not need to be implemented.

Vegetation management projects such as the Hanlon and Scotchman Stewardship Projects which implement burning, thinning and other overstory vegetation management activities, overlap with the current grazing permits. However, with the no grazing alternative, there would be no need for the mitigation measures from these projects regarding grazing. The slight increase in available forage created by the timber sale projects and prescribed burning, would not change vegetative composition or cover related to grazing since no grazing would occur.

Noxious Weed Best Management Practices for the vegetation management/burning projects that affect grazing (for instance Early Detection Rapid Response (EDRR), equipment cleaning, etc.) would still be implemented and could affect vegetative cover and composition (refer to Noxious Weeds specialist report for more information). If grazing were no longer permitted, the EDRR measures performed by the permittee would be discontinued. There would also be less EDRR through Forest Service range inspections. Since permittees are very active in EDRR, the elimination of those efforts may increase the likelihood of a new invasive species changing the vegetative cover and composition negatively somewhere within the analysis area.

Eliminating grazing with the ongoing fuels reduction/prescribed burning may change species composition or cover in areas where severe or higher temperature burns alter soil productivity or where noxious weeds establish. Those sites are usually patchy and small in size (often 1/10 acre or less) within large scale under burning. Frequently, those sites are rehab-seeded against noxious weeds. Therefore, the overall composition and cover typically are not affected.

Wildfire and a no grazing scenario do not anticipate an overlapping effect to vegetative composition and cover. Since grazing typically affects fine fuels in the direct/indirect affects for wildfire burn patterns, (see Fire/Fuels specialist report), the change in vegetation cover and composition would likely stay about the same in site size and location. Composition might change relative to which species are fire tolerant verses those which increase without grazing.

Eliminating grazing would not result in a change of vegetation relative to culvert replacement or their upgrades. Eliminating grazing coinciding with road decommissioning or maintenance would not change vegetation.

Since there is no current interaction between grazing and Special Use permits, no effect is expected by removing cattle.

There would be no interaction between the permittees and compliance with Access and Travel Management. No effect is expected for vegetation.

Livestock may affect traditional cultural use of the landscape by Native American Tribes, in particular the Kalispel Tribe (see Heritage Resources report for more information). The extent and location of traditional cultural properties (TCP's) within the LeClerc Creek Allotment are not well-known by the Forest Service, therefore determining the extent of these effects is difficult.



There would be no interaction between recreationists (hunters, hikers, ATVs, etc.), and grazing, so no pressure moving livestock into undesired locations (vehicle travel, open gates) to affect livestock use on vegetation would occur. No effect to vegetation is expected.

While livestock do contribute sediment to streams within the LeClerc Creek Allotment, it is relatively low compared to the amount from other sources such as roads. Eliminating livestock grazing from the area would remove a lesser source of sediment in the watersheds and effects may not be measurable against the background of sediment contributed by roads and other sources.

Livestock would not utilize 45% of the available forage within the LeClerc Creek Allotment. Therefore, based on an average consumption of 26 pounds of forage per day per animal unit, there would be an additional 13,903 pounds of forage available to wildlife over the 23,412 acres contained within the LeClerc Creek Allotment.

### **Forest Plan Compliance**

The existing conditions within the Forest Plan Standards and Guidelines have allowed for grazing on the LeClerc Creek Allotment. Not grazing under Alternative B would be consistent for the management areas (MAs) within the allotments. Since no grazing would occur, no standards defined for livestock use would be exceeded. This meets resource needs and management area direction.

Specific to rangeland management, The Plan states:

1. Management of grazing by domestic livestock will be guided by project level allotment plans. The development of these plans will be integrated with the needs associated with use and values present in the area. All associated uses and values will be considered, with special consideration given to: (1) fish and wildlife habitat needs; (2) timber harvest and cultural activities; (3) riparian values; (4) recreation use; and (5) threatened, endangered and sensitive species. Further considerations are contained as other resource standards and guidelines in this section of the plan.
2. Identify lands in unsatisfactory condition (see glossary). Develop allotment plans with specific objectives for these lands on a priority basis under a schedule established by the Forest Supervisor. These objectives will define a desired future condition based on existing and potential values for all resources. The allotment plan will include: (1) a time schedule for improvement; (2) activities needed to meet forage objectives; and (3) an economic efficiency analysis.
3. Livestock stocking levels in project plans will be determined by considerations including: (1) Forage availability, suitability and condition; (2) other resource needs as shown above; (3) demand for grazing on the allotment and other livestock forage needs; (4) permittees ability to self-monitor management and maintenance in project allotment management plans and grazing permits; and (5) economic factors including development and maintenance cost of facilities.

4. Coordination requirements in the above considerations will include: (1) timing of the timber harvest and associated activities and grazing schedules; (2) protection of livestock barriers or mitigation of these values where desirable; (3) reducing the spread of noxious weeds and controlling noxious weeds where present; (4) seeding of livestock and wildlife forage species, considering desirability of seeding palatable and non-palatable forage species and species competitive with tree production; and (5) livestock-wildlife conflicts, i.e. restrict domestic sheep grazing on Bighorn sheep range.
5. Table 4.15 (Allowable Use of Available Forage, Riparian Areas) and Table 4.16 (Allowable Use of Available Forage, Suitable Range Except Riparian Areas) the standards for utilization which will be used in preparing allotment plans in both riparian and other areas to be grazed:

Please see The Forest Plan for the tables referenced above. This alternative is expected to meet these requirements as it is designed to improve riparian conditions and an AMP is a product of the analysis.

The alternative meets the Grazing Management Objectives of PACFISH/INFISH Biological Opinion (PIBO) as applicable for this analysis. Refer to Aquatics/Fisheries report for details. PIBO amended the Forest Plan. Monitoring has shown that standards for livestock use as described in PIBO have not been exceeded, this information is incorporated by reference and is available at the Newport-Sullivan Lake Ranger Districts offices.

### **Adaptive Management Strategies Common to Alternatives C and D**

Alternatives C and D incorporate an adaptive management strategy, thus desired future conditions are an essential component of the proposed action. Adaptive management incorporates an “implement-monitor-adapt” strategy that provides flexibility to adapt to changes in environmental conditions, or to respond to subsequent monitoring information indicating that desired conditions are not being met. See Appendix B (Adaptive Management Strategy) for more detailed information.

#### *Permit Administrative Actions*

Term grazing permits may be modified at the request of the permit holder or the Agency. Permit modifications are administrative actions and do not require additional analysis unless they are inconsistent with existing environmental analyses and related decisions. Permit modifications may include the actions described below.

An administrative action could include: modifying the seasons of use, numbers, class of livestock allowed, or the allotment to be used under the permit, because of resource condition, or permittee request. These changes may be implemented at the request of the agency or the permittee. Grazing management needs to be responsive to Forest resource condition. It also requires responsiveness to the livestock permittee operational needs. For example, market economics may lead to short-term reductions in breeding cattle and consequently the need to

adjust the number of animals grazed in a given year on Forest rangelands. Adjustments to improve attainment of desired resource conditions within an allotment are beneficial to vegetative cover and composition. Where vegetation conditions are healthy, they would be maintained, and expected to improve where monitoring indicated a need for change. The result is expected since these modifications include shortening the period of use to reduce, or eliminate, grazing impacts during periods where plants or other resources are most susceptible to damage, or avoid conflicts. Modifying the season of use for an allotment would be minor, and must keep to the two weeks parameter for livestock on and off dates. Again, this is considered to be beneficial since it is responsive to monitoring results or seasonal climatic fluctuations such as drought. Before approval, proposed changes would be evaluated to ensure they fall within the scope of the current NEPA analysis (ex: keep within the scope of analyzed Animal Unit Months, limited riparian vegetative resource impacts are within standards and guidelines, etc).

The effect of permit modifications is anticipated to be beneficial to vegetative cover and composition. Modifications could result in decreased bare ground and an increase in species composition where an overall decrease in grazing use on the allotments occurs. Changes would keep the trend in upland and riparian vegetation static to upward and desired conditions would continue to be attained. Therefore, vegetative composition and cover is expected to improve.

Please note, changes in the kind of livestock (ex: changing an allotment from cattle to sheep), are a modification. However, since it is not covered in this analysis, a new environmental analysis would be required.

The effect of administrative changes is anticipated to be beneficial. For example, changing the season of use to avoid grazing impacts or conflicts with critical resource needs eliminates the conflict. Adapting the grazing season in response to seasonal variations in climate and productivity, such as during periods of drought will reduce impacts to vegetation. Matching grazing use to actual resource conditions and productivity allows grazing use to stay in compliance with Forest Plan direction and site specific desired conditions.

Overall, the effect of modifications is anticipated to be beneficial due to their design in direct response to monitoring and management. Reducing the amount of time grazed, or reducing utilization levels, would result in reducing the overall grazing impacts and improve attainment of desired conditions through grazing within the affected area of the allotment.

#### *Grazing System Modifications*

Modifying the grazing system is an administrative action which provides flexibility to improve range health on the allotments. Incorporating changes by altering patterns of livestock use, pasture deferment, pasture rest, altering the trailing or livestock movement routes, may reduce grazing effects in areas identified through monitoring as not moving toward or maintaining desired conditions at a stable or improving rate. Modifying grazing systems may also be implemented where fire, flood, etc.; detrimentally impact resource conditions or where treatment activities require a rest period to provide for site recovery. Where “rest” occurs, specific recovery criteria for grazing re-establishment would be specified (such as plant vigor, ground cover, etc). The effect of changed grazing systems is anticipated to be beneficial. Matching grazing use to actual resource conditions and productivity allows grazing to stay in compliance with Forest Plan direction and site specific desired conditions.

### *Range Improvements*

Administratively modifying a permit to improve existing water developments is part of adaptive management. Grazing permit modifications (improving range structures) increase management effectiveness. It is expected to be beneficial to resources by protecting the water source and improving livestock distribution away from riparian areas, thereby reducing livestock impacts. Effectiveness of fences, water developments, and handling facilities is covered in more detail in Alternatives C and D.

## **Alternative C**

Alternative C was developed to address resource concerns and deficiencies identified with the current management strategy and supporting rangeland infrastructure which have resulted in undesired livestock drift, re-grazing of certain areas past the intended off-date, increased grazing pressure in riparian and wetland areas. A complete description of Alternative C can be found in Chapter 2 of this document.

### **Direct and Indirect Effects**

Under this alternative, permitted livestock grazing of NFS Lands would continue with some changes to the grazing system, construction of improvements to improve distribution and management of the allotment, and changes to the allotment boundary.

This analysis does not detail optional management strategies the permittees can use to attain improved resource conditions. Some management strategies are not mandated, but administratively available to implement. They cannot be mandated through the U.S. Forest Service permit system, but some permittees have already expressed their desire to use these wherever possible to limit the amount of future fencing that could occur if stages are implemented to the fullest extent. These measures include, but are not limited to: increased riding and strategic placement of supplements, (ex: salt or nutrient blocks) which attract livestock away from riparian areas. Proper salting can be an effective method in improving distribution. Livestock usually go from water, to grazing, then to salt; therefore, it is not necessary to place salt near watering areas. Livestock can be drawn to areas they would otherwise avoid by placing salt away from water (Holechek et al. 2001).

Monitoring will determine the effectiveness of an alternative's implementation on resources. Permittees are encouraged to monitor their grazing so as to be proactive in determining livestock moves.

### *Vegetation Cover and Composition*

Vegetation is the primary component assessed in the range resource analysis. Grazing can alter composition and cover through forage utilization and the physical actions (trampling) on vegetation and soils. Vegetative composition and cover is monitored in uplands and riparian areas. Grazing management techniques (ex: range structures or improvements, adaptive management, and administration to implement) affect how livestock graze and the overall effects to resources.

This alternative utilizes multiple range infrastructure changes and adaptive management strategies to meet desired conditions for the allotments. The infrastructure changes are those management steps (ex: fences, water developments, modified allotment and pasture boundaries, etc.) which are designed to improve resource conditions. The following describes how the changes work toward improving or maintaining vegetative composition and cover.

Alternative C implements multiple water developments, fencing, and improved corrals to improve livestock distribution away from riparian areas. It also modifies allotment and pasture boundaries to facilitate more effective movement of livestock between pastures by having spatially connected pastures, as well as identifying defendable allotment and pasture boundaries that are resistant to livestock drift.

Alternative C is expected to improve riparian vegetation cover and composition. Upland vegetation already exists at a desirable state or trend. This is expected to continue. Alternative C would reduce livestock riparian use when the range improvements are in place and functioning. Also, the ability to use other management options (salting, supplement placement, additional riding) are available for the permittee to use.

If monitoring indicates these are not improving the riparian conditions, then the subsequent actions described in the Adaptive Management Strategy (Appendix B) may add additional range improvements where needed. The emphasis is to do this where monitoring dictates the need and not all at once, and to be logistically and economically feasible.

The mitigations of additional fences, new water developments with water source protection, and other livestock handling facilities (example: improved corrals at Diamond City) are management methods to improve the vegetative cover and composition. Continued grazing should not degrade the ecological trend in this allotment. Plant ecological trend is comprised in part, by plant percent composition and cover. Therefore, if the ecological trend is static or improving, it generally indicates the status of composition and cover is improving.

Maintaining the ecological trend meets the goal to improve vegetative cover and condition. Rationale for grazing effects on vegetation are described based upon observations within the analysis area and standard rangeland management science. These are discussed in some of the following sections.

New water developments attract livestock away from resource sensitive areas. Clawson found that the installation of a water trough in an Oregon mountain meadow pasture dramatically reduced the amount of time cattle used a stream and spring in the pasture (Clawson 1993). Since all new and upgraded water developments would be installed outside of Riparian Habitat Conservation Areas (RHCAs) and the spring sources fenced off, the forage would be better utilized within Forest Plan Standards and Guidelines. The proposed water development improvements help livestock distribution. This reduces the amount of monitoring required by rangeland management specialist and the time the permittees must spend to move livestock from concern areas.

Unmanaged or improperly managed grazing can be detrimental to plant communities. This alternative has been developed to address known deficiencies in infrastructure and management

that contribute to improperly managed grazing. Therefore plants will not show a loss of vigor or reproduction activity in either the upland or riparian vegetation. Thus, riparian composition and cover are expected to improve under this alternative.

Managed properly, grazing is a natural process that can maintain plant health (Bradford, et al, 2002). A plant subject to overgrazing, either by domestic livestock or wildlife species, would weaken over time. This would make it less able to grow adequate healthy roots, reducing above-ground production of leaf material and reducing its capability to store carbohydrates for the following year's growth, to withstand drought, extreme winters, or additional grazing from herbivores. A plant's ability to continue to grow healthy roots is critical to its survival.

Effects of livestock grazing include impacts directly to individual plants and alteration of their physical environments. Direct impacts from livestock include trampling and removal of plant materials. Indirect impacts such as soil compaction and related reduction in soil and water infiltration, soil erosion, invasive/noxious weed introduction and spread, changes in seed bank, reduction in soil litter, and effects to pollinators may occur under some grazing regimes in some areas (Stoddard et al. 1975).

Dry to moist meadow types are most likely the first plant communities to experience impacts from cattle, and have been affected by cattle grazing more than any other vegetation communities. Early in the season, when water is more abundant, cattle generally stay out of the wet meadow areas, concentrating on the dry to moist meadow vegetation. The dry/moist and wet meadow type is an important portion of the analysis area and cattle have a tendency to collect in the meadows, especially wet meadow environments. It has been shown that cattle spend more time in the riparian areas mid-late summer season than in the late spring or early summer season when they distribute their time more evenly between the uplands and riparian areas (Parsons, et al. 2003).

Using a grazing strategy in riparian areas that provides for re-growth of riparian plants should leave an adequate amount of vegetation at the time of grazing to maintain plant vigor and provide stream bank protection. Allowing forage plants to regrow should provide vegetation cover for stream bank protection during the following winter and early spring high flow periods (Clary and Webster 1989). Maintaining appropriate use indicators can help preserve plant vigor, reduce browsing on willows, stabilize sedimentation, and limit stream bank trampling.

Meadows are often comprised of different dominant plant species. Although drier types are sometimes closely associated with wetter types, livestock may use drier areas at different times. Livestock use in spring and early summer tends to begin on the dry to moist meadow sites earlier because of accessibility. The wetter meadows are saturated at this time and inaccessible to livestock. The desirable plant species are favored during this time period.

If livestock are in meadow communities early and for extended periods of time, soils can become compacted and less able to absorb and store water. This can result in the phasing out of plants that require more water for longer periods of time, and establishment of plants that can take advantage of greater depths-to-water later in the season. An increase in bare ground and an undesirable change in grasses and forbs increase the potential for the establishment of weedy species. This effect can be mitigated by grazing these areas for a shorter duration of time, with

less grazing intensity, or both. The adaptive management process would allow for areas with undesired impacts to be identified and addressed in order to maintain or improve resource conditions.

Table XX below compares acres suitable for grazing between Alternative A and C. Alternative C would result in a loss of 887 acres of suitable grazing land. While the effects of this reduction in suitable grazing land remain to be determined, monitoring and adaptive management will help to determine if the current permitted stocking rate of 101 cow/calf pair (535 AUM's) will be sustainable. Based on professional judgement, the Rangeland Management Specialist does not feel that the reduction in suitable grazing acres will necessitate an immediate change to the stocking rate for the LeClerc Creek Allotment.

Suitable Acres	Alternative A	Alternative C
	5,452	4,565

Table XX. Comparison of Suitable Acres Between Alternatives A and C.

#### *Range Infrastructure/Improvements*

Range infrastructure affects grazing management. This alternative utilizes management administration and adaptive management with range infrastructure. These forms of sound range management techniques help improve or maintain resources including vegetative cover and composition. The following discussion explains how the infrastructure and management maintain or improve vegetation.

Grazing permittees have always been responsible for maintenance of range improvement projects and project maintenance is a term and condition of their grazing permits. Current range improvement project maintenance and that which would be required under Alternative C are displayed below.

Allotment	Current		Alternative C	
	Fence (miles)	Water developments	Fence (miles)	Water developments
LeClerc Creek	14.5	0	10.5	4-9

Note- miles of fence are approximate, and total fencing under this alternative would depend on the amount of drift fence required to reduce cattle drift.

Range improvement project maintenance is expected to increase with Alternative C. Increased efforts to complete project maintenance based on the number of water developments and miles of fence would have an impact to permittees by requiring more time to complete such work. Usual maintenance for projects that are in good or satisfactory condition generally requires little to be done each year. Each improvement would have to be visited at least annually to ensure it is functioning properly and maintenance would occur as needed prior to and throughout the grazing season. Therefore, the increase in the number of projects to maintain would likely have a relatively small impact on permittees time over that currently required.

Reducing impacts to areas of concern would benefit the resources, such as vegetation, by allowing more time for permittees to monitor other areas and spending more time on other

allotment needs, such as livestock movement, implementing utilization self-monitoring measurements, and tending to range improvements, for monitoring and repair.

Since several new range improvements would be installed with this alternative, using livestock management strategies would still be necessary to improve distribution. These include riding, active herding, and strategic salt-placement. Skovlin found that herding cattle and pushing them to areas with poor accessibility but adequate forage improved uniformity of use in mountainous terrain (Sowell et al. 1999). Under this alternative, the strategies are expected to be effective livestock distribution tools and thereby improve vegetative cover and composition.

Livestock trails exist on the landscape in several areas throughout the current allotment boundary. Currently one of the primary trails used by livestock in the Lower Bunchgrass pasture is the 1935000 road. Under Alternative C, 2 additional cattle guards would be installed in the 1935000 road which would greatly complicate trailing of livestock along the road. This may necessitate cattle being trailed across the landscape in areas that are currently low disturbance when compared to a road bed. This trailing may lead to increased impacts to soils, hydrology and vegetation (see Soils and Hydrology reports for further information).

Short term administrative actions may be used as tools to reduce livestock effects. These administrative management strategies are included in both Alternative C and Alternative D. These actions include salting, changing season of use, change in animal numbers, change in animal class, change in the number of days available for utilization, change in the grazing system, change in trail routes, and use of riders. The flexibility to promptly implement one or more of these measures allows management to take actions improving livestock distribution and forage utilization. Again, this would lead to improved vegetative conditions.

Adaptive management strategies of additional fences or water developments to reduce livestock effects may be implemented. As said above, proper watering sources help distribute livestock away from areas which might otherwise receive impact. This reduces the time required by permittees to implement other livestock distribution strategies. This allows them more time to manage the grazing and attain goals of improved livestock distribution which leads to improved vegetative conditions.

### **Forest Plan Compliance**

The existing conditions within the Forest Plan Standards and Guidelines have allowed for grazing on the LeClerc Creek Allotment. Grazing under Alternative C would be consistent for the management areas (MAs) within the allotments. The capable AUMs exceed the permitted AUMs proposed in this alternative. This meets resource needs and management area direction.

Specific to rangeland management, The Plan states:

1. Management of grazing by domestic livestock will be guided by project level allotment plans. The development of these plans will be integrated with the needs associated with use and values present in the area. All associated uses and values will be considered, with special consideration given to: (1) fish and wildlife habitat needs; (2) timber harvest and cultural activities; (3) riparian values; (4) recreation



use; and (5) threatened, endangered and sensitive species. Further considerations are contained as other resource standards and guidelines in this section of the plan.

2. Identify lands in unsatisfactory condition (see glossary). Develop allotment plans with specific objectives for these lands on a priority basis under a schedule established by the Forest Supervisor. These objectives will define a desired future condition based on existing and potential values for all resources. The allotment plan will include: (1) a time schedule for improvement; (2) activities needed to meet forage objectives; and (3) an economic efficiency analysis.
3. Livestock stocking levels in project plans will be determined by considerations including: (1) Forage availability, suitability and condition; (2) other resource needs as shown above; (3) demand for grazing on the allotment and other livestock forage needs; (4) permittees ability to self-monitor management and maintenance in project allotment management plans and grazing permits; and (5) economic factors including development and maintenance cost of facilities.
4. Coordination requirements in the above considerations will include: (1) timing of the timber harvest and associated activities and grazing schedules; (2) protection of livestock barriers or mitigation of these values where desirable; (3) reducing the spread of noxious weeds and controlling noxious weeds where present; (4) seeding of livestock and wildlife forage species, considering desirability of seeding palatable and non-palatable forage species and species competitive with tree production; and (5) livestock-wildlife conflicts, i.e. restrict domestic sheep grazing on Bighorn sheep range.
5. Table 4.15 (Allowable Use of Available Forage, Riparian Areas) and Table 4.16 (Allowable Use of Available Forage, Suitable Range Except Riparian Areas) the standards for utilization which will be used in preparing allotment plans in both riparian and other areas to be grazed:

Please see The Forest Plan for the tables referenced above. This alternative is expected to meet these requirements as it is designed to improve riparian conditions and an AMP is a product of the analysis.

The alternative meets the Grazing Management Objectives of PACFISH/INFISH Biological Opinion (PIBO) as applicable for this analysis. Refer to Aquatics/Fisheries report for details. PIBO amended the Forest Plan. Monitoring has shown that standards for livestock use as described in PIBO have not been exceeded, this information is incorporated by reference and is available at the Newport-Sullivan Lake Ranger Districts offices.

## **Monitoring Recommendations**

Monitoring related to range management for Alternative C would follow the methods, procedures and frequencies described in the Adaptive Management/Monitoring Strategy contained as Appendix B of this report.

## **Cumulative Effects**

### *Spatial Bounding*

Cumulative effects for Alternative C are spatially bounded by the proposed allotment boundary for this alternative. The effects of grazing and livestock could be present throughout the proposed allotment boundary but are most realized in riparian and wetland areas, since upland sites tend to be drier and less susceptible to detrimental impacts such as exposure or compaction of soil (see Soils report for more information).

### *Temporal Bounding*

Cumulative effects for Alternative C are temporally bounded to the time frame within 5-10 years of implementation of the decision and resolution of the objection process. No additional projects and treatments in addition to Alternative C would have large scale effects to grazing or vegetation resources within the proposed allotment boundary. Continued timber harvest, invasive species treatment, road maintenance, and recreational activities are anticipated to be the reasonably foreseeable future events.

### *Past, Present, and Reasonably Foreseeable Actions*

Vegetation management projects such as Hanlon and Scotchman Stewardship projects have or will implement burning, thinning and other overstory vegetation management activities which overlap the allotment boundary for Alternative C. Grazing mitigation measures from these projects would be implemented. These measures include postponing construction of improvements after an activity unit (timber sale) is completed. They would protect range structures from damage, increasing their effectiveness to disperse livestock over the landscape. This results in sound range practices which retain desired vegetative composition. The forage analysis for these vegetation projects did not show a great increase in forage production. The slight increase in available forage created by the timber sale projects and prescribed burning would not change vegetative composition or cover related to grazing. This alternative and the respective vegetative project mitigations are designed to not increase livestock use in riparian areas and increase livestock distribution to uplands.

Grazing with fuels reduction/prescribed burning may change species composition or cover in areas where severe or higher temperature burns alter soil productivity or noxious weeds establish. Those sites are usually patchy and small in size (often 1/10 acre or less) within large scale underburns. Frequently, those sites are rehab-seeded against noxious weeds. Therefore, the overall composition and cover typically is not affected.

Fire suppression is not expected to have an effect to vegetative composition and cover. This is due to the policy that suppression activities restore any Forest Service structures damaged by suppression activities. Effects of grazing with fire are addressed in the Fire/Fuels specialist report. Wildfire effects are evaluated after the event. Post fire the resources are considered and analyzed and activities depend upon the extent and severity of the burn. Vegetation composition and cover effects would be determined at that time. Since grazing may affect fine fuels, it may

affect wildfire burn patterns (see Fire/Fuels specialist report). The change in vegetation cover and composition would likely stay about the same in site size and location. Composition might change relative to which species are fire tolerant versus those which increase without grazing.

Noxious weed treatments would continue on the allotment. Noxious Weed Best Management Practices (BMPs) would continue to be implemented in the grazing strategies. If grazing is permitted, the Early Detection Rapid Response (EDRR) measures may be completed by the permittee. There would also be more EDRR through Forest Service range inspections. Treating noxious weeds helps recover the desirable plant composition and cover in areas where weed populations are established as well as preventing noxious weeds from further displacing desirable plants in new sites. Overall, the Forest wide weed control measures, BMPs, and active permittee participation leads to desirable plant composition and cover in the analysis area.

Firewood gathering is likely to have little, to no, effect with grazing on understory vegetation composition or cover. Rarely, a wood cutter may fell a tree across a fence, corral, or trough. If this happens, sometimes the wood cutter fixes the fence. If not, and the permittees or Forest Service finds it, the structure would be repaired as soon as possible. The time from the event to the discovery may affect the grazing plan effectiveness short term, a couple of weeks to a month. The effect is likely minor given that a more important structure is likely to be discovered promptly or at the time of its use.

Road maintenance or culvert replacement, upgrade activities have little to no effect on grazing. The machinery could temporarily displace livestock for a brief time, usually less than one hour. It is not likely to displace them into areas they can't already access.

Within the last ten years, recreation-related uses have increased in the LeClerc Creek area. Recreation has been observed as having measureable impacts to riparian areas, which degrade and damage riparian resources and increase the amount of sediment in streams. The proposed action would act to lessen impacts to riparian areas from livestock grazing by encouraging riparian recovery and likely reducing the amount of time livestock spend in riparian areas. Due to recreation use combined with livestock use, some riparian areas and streams may demonstrate characteristics that are less than their potential, but impacts to these areas are likely to be reduced by the proposed action compared to the existing condition.

Recreation use such as camping is also having an impact to primary range areas within the project boundary. Many of the homestead meadow sites, which are considered to be semi-permanent primary range areas are increasingly used as camping locations for Forest visitors. Use of these homestead meadows by campers is causing areas of soil compaction, which in turn reduces infiltration and productivity. Heavily used areas are also less desirable to livestock.

Livestock may affect traditional cultural use of the landscape by Native American Tribes, in particular the Kalispel Tribe (see Heritage Resources report for more information). The extent and location of traditional cultural properties (TCP's) within the LeClerc Creek Allotment are not well-known by the Forest Service, therefore determining the extent of these effects is difficult.

Continuing to permit the current number of livestock on the LeClerc Creek Allotment would allow for a sustained level of livestock production for the permittees, which equates to sustaining the local economy.

Continuing the permitting of livestock within the project area could have some impact on post-harvest regeneration rates of timber on NFS and private lands. Impacts to tree regeneration have been observed to be insignificant in dry, upland areas and therefore, the impact is likely minimal.

The activities in Alternative C would act to guide the LeClerc Creek Allotment to improved resource conditions while sustaining the current level of permitted livestock and AUMs.

## **Alternative D**

Alternative D was developed based on input from the current allotment permittee and further field reconnaissance to address operational concerns and allow for more effective and efficient management of the allotment. Alternative D is a revision of Alternative C with the following changes:

1. The Hanlon Meadow that is currently not identified within the proposed action would be identified as a pasture within the allotment and would be monitored to standards. Once grazing standards have been reached, all cattle would be removed from Hanlon Meadow and the gates would remain closed. The need to use the Hanlon Meadow Pasture after grazing standards were met would be approved on a case by case basis by the line officer (i.e. short term holding for an injured cow).
2. The proposed fence around the NW corner of T36N R44E S21 would not be implemented.
3. The SE allotment/pasture boundary would be adjusted from the Middle Branch LeClerc Creek to the existing fence along the East Branch road (FR 1934) as shown on the map. There would be a new fence constructed adjoining the existing fence along the East Branch Road North along the creek, outside of the RHCA management zone and would tie into topography or vegetation to help restrict cattle movement south around Section 13.
4. Fencing would be constructed and/or natural barriers would be used on the east side of MB LeClerc Creek in T36N R45E S16 and S20 to exclude cattle from MB LeClerc Creek.
5. The southern allotment boundary would be adjusted in T36N R45E S29 NE1/4 to include the shrub wetland south of the holding pen in the allotment. Part of this proposal is also to extend proposed fencing in section 20 south along the road to the bridge, then cross the stream and continue down the east side of MB LeClerc Creek and tie into existing fencing. Additionally, the proposed cattle guard at the north end of the holding pen in section 20 would be dropped and the existing cattle guard in section 29 would be left in place. This change is being proposed so the existing PIBO DMA on the MB LeClerc

Creek would remain inside the allotment and continue to provide data pertinent to cattle management and the effects of grazing. This DMA could be greatly helpful in determining the effects from any changes that get implemented since we have pre-project data collected that shows standards were not being exceeded. The need to fence this site would be re-evaluated after 4 years to allow time for monitoring to determine if impacts to this reach of stream are within acceptable standards or not.

6. Construct new fence to tie 2 pieces of existing fence together creating an effective barrier to cattle drift in the NW ¼ of T36N R44E S20.
7. Modify the northern allotment boundary to include an area of upper Paupac.
8. Relocate the proposed cattle guard on the 1936 road located in T37N R43E S30 to T37N R43E near the section line between Sections 14 and 23
9. Install an additional cattle guard in the 1936010 road in T37N R43E S25 NE1/4 NE1/4.
10. Construct a short drift fence across the 1933141 road to reduce cattle drift out of the Dry Canyon pasture onto private lands (this is a system road but is ML1).
11. Additional drift fence may be needed in T36N R44E S06 (exact location to be determined) to further eliminate drift to private lands.

All other items proposed in Alternative C (grazing strategy, season of use change, range improvements, etc) would be included in Alternative D as well.

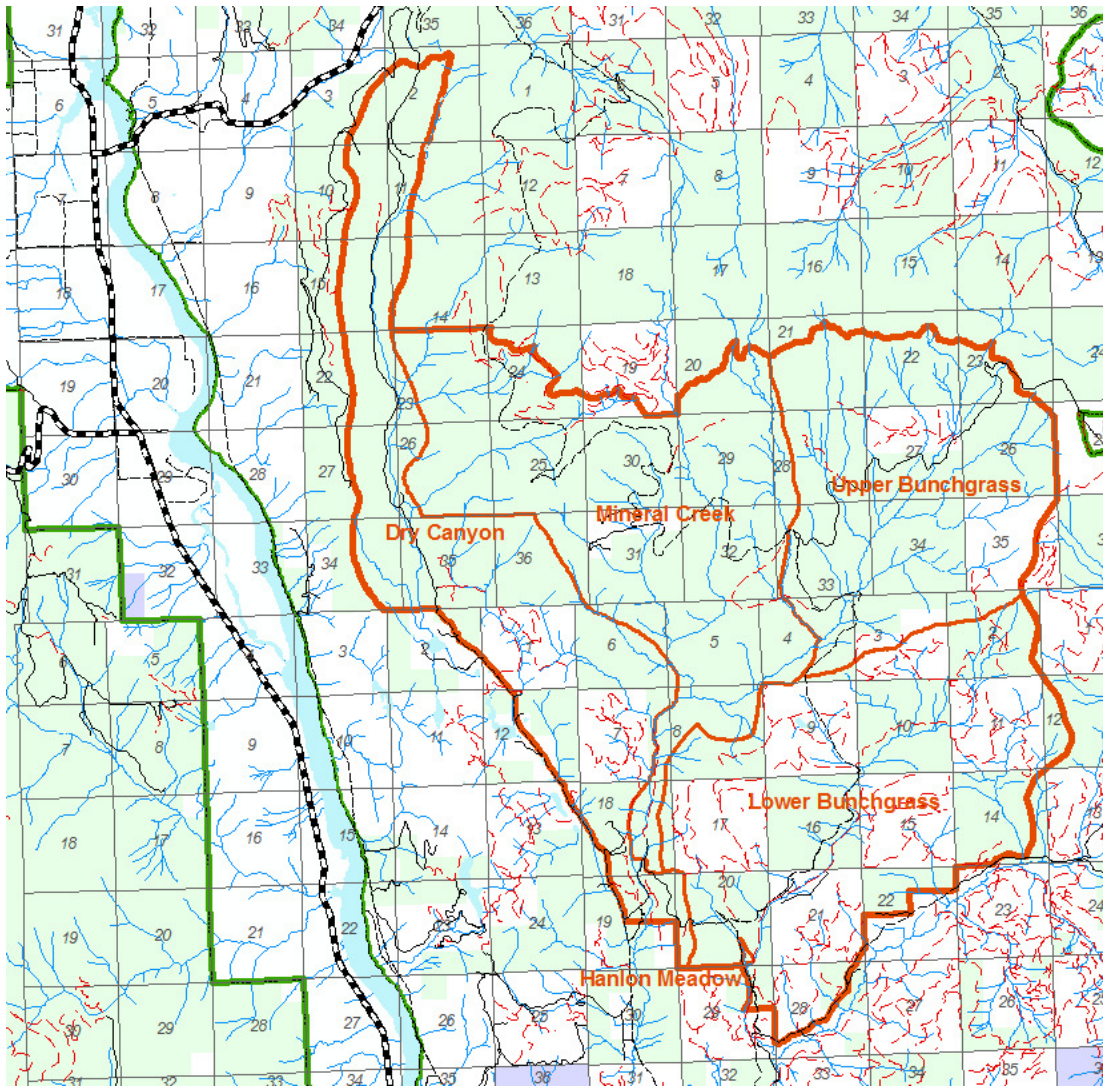


Figure XX. Map depicting proposed pastures in Alternative D.

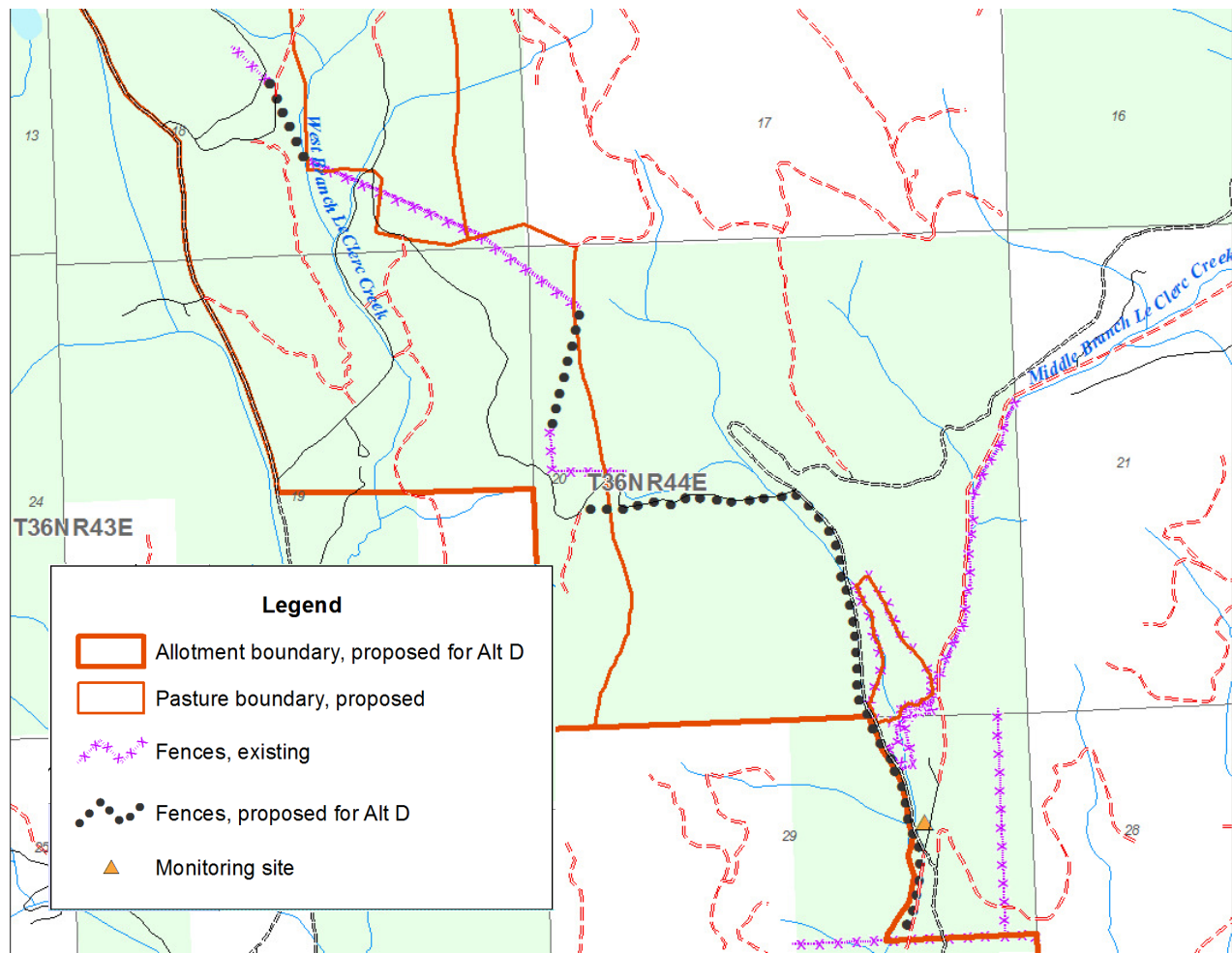


Figure XX. Southwest area boundary detail showing existing and proposed fences.

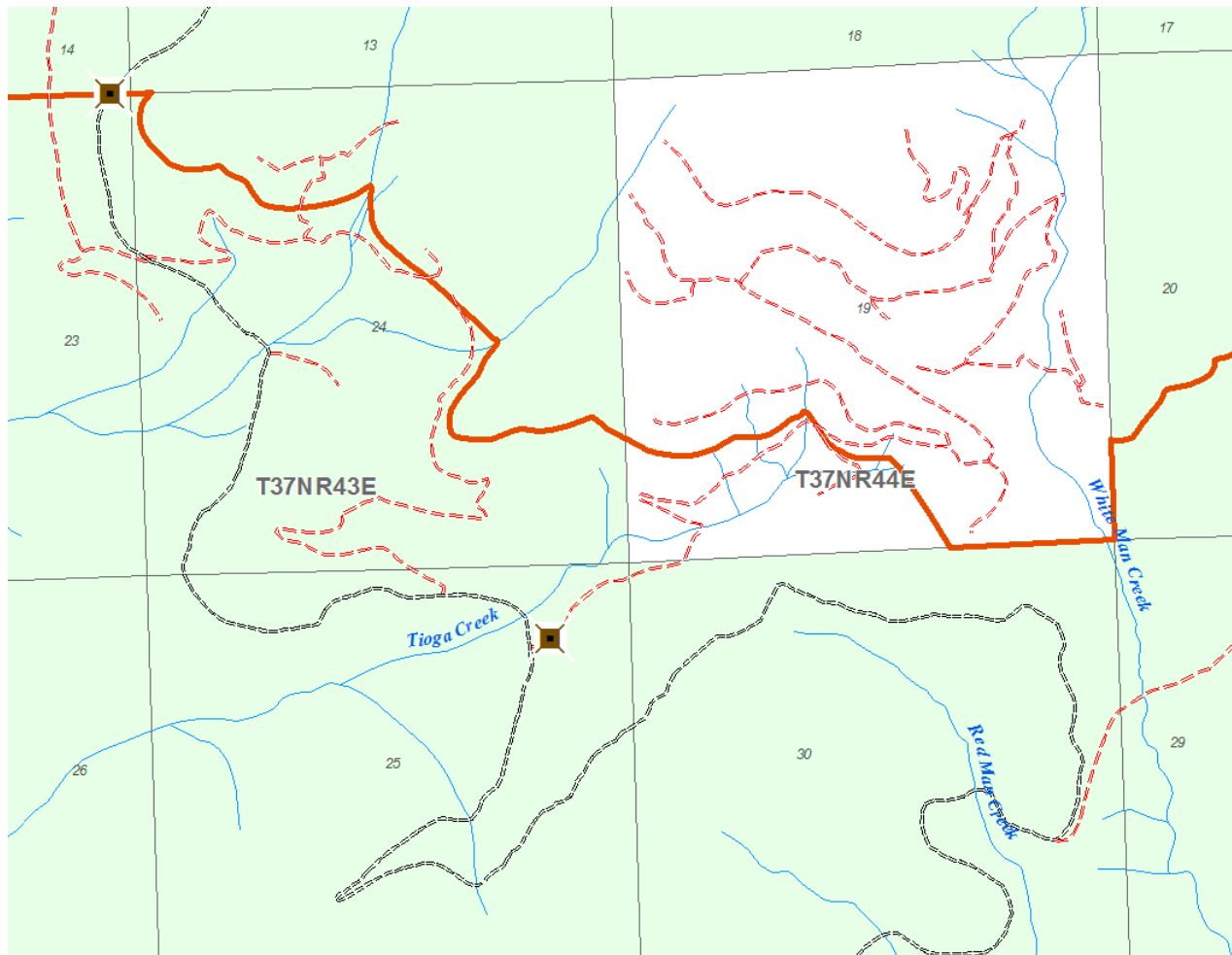


Figure XX. Cattleguard locations in Paupac area for Alternative D.

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Alternative D increases the size of the Lower Bunchgrass pasture by expanding the southeast pasture/allotment boundary from the Middle Branch LeClerc Creek to existing fence along the East Branch LeClerc Creek Road (Forest Road 1934000). The size of the pasture would increase to 7,401 acres from 5,603 acres (a 32% increase in acreage). This expansion includes approximately 335 acres of additional suitable grazing lands on NFS land. These additional acres that are suitable for grazing, when considered in conjunction with water developments and management actions such as salting or herding of cattle may reduce grazing pressure and impacts from livestock in sensitive riparian and wetland areas near Middle Branch LeClerc Creek.

Alternative D also increases the size of the Mineral Creek pasture by including acres in the Paupac area. The size of the pasture would increase to 7,023 acres from 5,603 acres (a 25% increase in acreage). This change from Alternative C is proposed to allow livestock to utilize roadside forage along the 1936000 Road as well as some forage adjacent to the road in old harvest units. This may reduce the grazing pressure on areas more sensitive to livestock, such as wetland and riparian plant communities adjacent to White Man and Red Man Creeks.

Unmanaged or improperly managed grazing can be detrimental to plant communities. This alternative has been developed to address known deficiencies in infrastructure and management that contribute to improperly managed grazing. Therefore plants will not show a loss of vigor or reproduction activity in either the upland or riparian vegetation. Thus, riparian composition and cover are expected to improve under this alternative.

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Dry to moist meadow types are most likely the first plant communities to experience impacts from cattle, and have been affected by cattle grazing more than any other vegetation communities. Early in the season, when water is more abundant, cattle generally stay out of the wet meadow areas, concentrating on the dry to moist meadow vegetation. The dry/moist and wet meadow type is an important portion of the analysis area and cattle have a tendency to collect in the meadows, especially wet meadow environments. It has been shown that cattle spend more time in the riparian areas mid-late summer season than in the late spring or early summer season when they distribute their time more evenly between the uplands and riparian areas (Parsons, et al. 2003).

Using a grazing strategy in riparian areas that provides for re-growth of riparian plants should leave an adequate amount of vegetation at the time of grazing to maintain plant vigor and provide stream bank protection. Allowing forage plants to regrow should provide vegetation cover for stream bank protection during the following winter and early spring high flow periods (Clary and Webster 1989). Maintaining appropriate use indicators can help preserve plant vigor, reduce browsing on willows, stabilize sedimentation, and limit stream bank trampling.

One of the concerns identified by the interdisciplinary team (IDT) when analyzing this project was livestock impacts to a wetland plant community south of the Hanlon Meadow holding pen in T36N R44E S29 NE1/4 NE1/4. This area has hummocks (vegetated mounds typically less than 1m in height and diameter which create uneven ground and are often associated with riparian areas and wetlands) that the IDT believed may be a result of livestock grazing of this wetland. Research by Smith et al (2012) found that there was no relationship between hummock formation and domestic livestock grazing, and concluded that the hummocks were likely formed by natural freeze-thaw processes. This area is of particular interest to rangeland management because it also contains a PACFISH-INFISH Biological Opinion (PIBO) monitoring site that is used to evaluate the effectiveness of grazing management. This PIBO site utilizes the Multiple Indicator Monitoring (MIM) protocol described by Burton et al (2011) to determine livestock impacts to riparian and wetland areas. Of the methods available in the MIM protocol, the Colville National Forest uses greenline stubble height, streambank alteration, and woody species browse to evaluate the impacts from livestock grazing. This site has been monitored twice in the past (see Hydrology report for more information) and standards for livestock use have not been exceeded. This site is excluded from the allotment with Alternative C but is included in Alternative D; including the site within the allotment boundary under Alternative D will allow for future monitoring to occur at this site to help determine if impacts from livestock grazing are allowing the associated riparian area to be maintained or improved, or are causing it to become degraded. If it is determined through monitoring that the monitoring site is being degraded, under the Adaptive Management Strategy (Appendix B) it would be excluded and an alternate monitoring site identified.

Meadows are often comprised of different dominant plant species. Although drier types are sometimes closely associated with wetter types, livestock may use drier areas at different times. Livestock use in spring and early summer tends to begin on the dry to moist meadow sites earlier because of accessibility. The wetter meadows are saturated at this time and inaccessible to livestock. The desirable plant species are favored during this time period. This effect can be mitigated by grazing these areas for a shorter duration of time, with less grazing intensity, or

both. The adaptive management process would allow for areas with undesired impacts to be identified and addressed in order to maintain or improve resource conditions.

If livestock are in meadow communities early and for extended periods of time, soils can become compacted and less able to absorb and store water. This can result in the phasing out of plants that require more water for longer periods of time, and establishment of plants that can take advantage of greater depths-to-water later in the season. An increase in bare ground and an undesirable change in grasses and forbs increase the potential for the establishment of weedy species.

Table XX below compares acres suitable for grazing between Alternative A and D. Alternative D would result in a gain of 461 acres of suitable grazing land. The proposed pasture boundary changes in the Lower Bunchgrass and Mineral Creek pastures add slightly to the acres suitable for grazing, which may lead to decreased grazing pressure and decreased undesirable resource impacts within those pastures. Monitoring would allow the Forest Service to determine if the increased suitable acres are allowing for accelerated recovery or reducing undesired impacts in areas that currently receive high levels of grazing pressure.

Suitable Acres	Alternative A	Alternative D
	5,452	5,913

Table XX. Comparison of Suitable Acres Between Alternatives A and D.

#### *Range Infrastructure/Improvements*

Range infrastructure affects grazing management. This alternative utilizes management administration and adaptive management with range infrastructure. These forms of sound range management techniques help improve or maintain resources including vegetative cover and composition. The following discussion explains how the infrastructure and management maintain or improve vegetation.

Grazing permittees have always been responsible for maintenance of range improvement projects and project maintenance is a term and condition of their grazing permits. Current range improvement project maintenance and that which would be required under Alternative D are displayed below.

Allotment	Current		Alternative D	
	Fence (miles)	Water developments	Fence (miles)	Water developments
LeClerc Creek	14.5	0	13	4-9

Note- miles of fence are approximate, and total fencing under this alternative would depend on the amount of drift fence required to reduce cattle drift.

A comparison of improvements between Alternatives C and D is displayed below.

Allotment	Alternative C		Alternative D	
	Fence (miles)	Water developments	Fence (miles)	Water developments
LeClerc Creek	10.5	4-9	13	4-9

Note- miles of fence are approximate.

Range improvement project maintenance is expected to increase with Alternative D. Increased efforts to complete project maintenance based on the number of water developments and miles of fence would have an impact to permittees by requiring more time to complete such work. Usual maintenance for projects that are in good or satisfactory condition generally requires little to be done each year. Each improvement would have to be visited at least annually to ensure it is functioning properly and maintenance would occur as needed prior to and throughout the grazing season. Therefore, the increase in the number of projects to maintain would likely have a relatively small impact on permittees time over that currently required.

Reducing impacts to areas of concern would benefit the resources, such as vegetation, by allowing more time for permittees to monitor other areas and spending more time on other allotment needs, such as livestock movement, implementing utilization self-monitoring measurements, and tending to range improvements, for monitoring and repair.

Since several new range improvements would be installed with this alternative, using livestock management strategies would still be necessary to improve distribution. These include riding, active herding, and strategic salt-placement. Skovlin found that herding cattle and pushing them to areas with poor accessibility but adequate forage improved uniformity of use in mountainous terrain (Sowell et al. 1999). Under this alternative, the strategies are expected to be effective livestock distribution tools and thereby improve vegetative cover and composition.

Livestock trails exist on the landscape in several areas throughout the current allotment boundary. Currently one of the primary trails used by livestock in the Lower Bunchgrass pasture is the 1935000 road. Under Alternative D, livestock would be able to continue to use the 1935000 road as a trail facilitating quicker, more efficient movement of livestock as compared to having to trail in an unroaded area. This may also reduce soil and vegetation impacts by trailing livestock in an area that is already highly impacted. This is a benefit when compared to Alternative C, which would place 2 additional cattle guards in the 1935000 road and greatly complicate the movement of livestock along the road.

Short term administrative actions may be used as tools to reduce livestock effects. These administrative management strategies are included in both Alternative C and Alternative D. These actions include salting, changing season of use, change in animal numbers, change in animal class, change in the number of days available for utilization, change in the grazing system, change in trail routes, and use of riders. The flexibility to promptly implement one or more of these measures allows management to take actions improving livestock distribution and forage utilization. Again, this would lead to improved vegetative conditions.

Adaptive management strategies of additional fences or water developments to reduce livestock effects may be implemented. As said above, proper watering sources help distribute livestock away from areas which might otherwise receive impact. This reduces the time required by permittees to implement other livestock distribution strategies. This allows them more time to manage the grazing and attain goals of improved livestock distribution which leads to improved vegetative conditions.

## Forest Plan Compliance

The existing conditions within the Forest Plan Standards and Guidelines have allowed for grazing on the LeClerc Creek Allotment. Grazing under Alternative D would be consistent for the management areas (MAs) within the allotments. The capable AUMs exceed the permitted AUMs proposed in this alternative. This meets resource needs and management area direction.

Specific to rangeland management, The Plan states:

1. Management of grazing by domestic livestock will be guided by project level allotment plans. The development of these plans will be integrated with the needs associated with use and values present in the area. All associated uses and values will be considered, with special consideration given to: (1) fish and wildlife habitat needs; (2) timber harvest and cultural activities; (3) riparian values; (4) recreation use; and (5) threatened, endangered and sensitive species. Further considerations are contained as other resource standards and guidelines in this section of the plan.
2. Identify lands in unsatisfactory condition (see glossary). Develop allotment plans with specific objectives for these lands on a priority basis under a schedule established by the Forest Supervisor. These objectives will define a desired future condition based on existing and potential values for all resources. The allotment plan will include: (1) a time schedule for improvement; (2) activities needed to meet forage objectives; and (3) an economic efficiency analysis.
3. Livestock stocking levels in project plans will be determined by considerations including: (1) Forage availability, suitability and condition; (2) other resource needs as shown above; (3) demand for grazing on the allotment and other livestock forage needs; (4) permittees ability to self-monitor management and maintenance in project allotment management plans and grazing permits; and (5) economic factors including development and maintenance cost of facilities.
4. Coordination requirements in the above considerations will include: (1) timing of the timber harvest and associated activities and grazing schedules; (2) protection of livestock barriers or mitigation of these values where desirable; (3) reducing the spread of noxious weeds and controlling noxious weeds where present; (4) seeding of livestock and wildlife forage species, considering desirability of seeding palatable and non-palatable forage species and species competitive with tree production; and (5) livestock-wildlife conflicts, i.e. restrict domestic sheep grazing on Bighorn sheep range.
5. Table 4.15 (Allowable Use of Available Forage, Riparian Areas) and Table 4.16 (Allowable Use of Available Forage, Suitable Range Except Riparian Areas) the standards for utilization which will be used in preparing allotment plans in both riparian and other areas to be grazed:

Please see The Forest Plan for the tables referenced above. This alternative is expected to meet these requirements as it is designed to improve riparian conditions and an AMP is a product of the analysis.

The alternative meets the Grazing Management Objectives of PACFISH/INFISH Biological Opinion (PIBO) as applicable for this analysis. Refer to Aquatics/Fisheries report for details. PIBO amended the Forest Plan. Monitoring has shown that standards for livestock use as described in PIBO have not been exceeded, this information is incorporated by reference and is available at the Newport-Sullivan Lake Ranger Districts offices.

## **Monitoring Recommendations**

Monitoring related to range management for Alternative C would follow the methods, procedures and frequencies described in the Adaptive Management/Monitoring Strategy contained as Appendix B of this report.

## **Cumulative Effects**

### *Spatial Bounding*

Cumulative effects for Alternative D are spatially bounded by the proposed allotment boundary for this alternative. The effects of grazing and livestock could be present throughout the proposed allotment boundary but are most realized in riparian and wetland areas, since upland sites tend to be drier and less susceptible to detrimental impacts such as exposure or compaction of soil (see Soils report for more information).

### *Temporal Bounding*

Cumulative effects for Alternative D are temporally bounded to the time frame within 5-10 years of implementation of the decision and resolution of the objection process. No additional projects and treatments in addition to Alternative D would have large scale effects to grazing or vegetation resources within the proposed allotment boundary. Continued timber harvest, invasive species treatment, road maintenance, and recreational activities are anticipated to be the reasonably foreseeable future events.

### *Past, Present, and Reasonably Foreseeable Actions*

Vegetation management projects such as Hanlon and Scotchman Stewardship projects have or will implement burning, thinning and other overstory vegetation management activities which overlap the allotment boundary for Alternative D. Grazing mitigation measures from these projects would be implemented. These measures include postponing construction of improvements after an activity unit (timber sale) is completed. They would protect range structures from damage, increasing their effectiveness to disperse livestock over the landscape. This results in sound range practices which retain desired vegetative composition. The forage analysis for these vegetation projects did not show a great increase in forage production. The slight increase in available forage created by the timber sale projects and prescribed burning would not change vegetative composition or cover related to grazing. This alternative and the

respective vegetative project mitigations are designed to not increase livestock use in riparian areas and increase livestock distribution to uplands.

Grazing with fuels reduction/prescribed burning may change species composition or cover in areas where severe or higher temperature burns alter soil productivity or noxious weeds establish. Those sites are usually patchy and small in size (often 1/10 acre or less) within large scale underburns. Frequently, those sites are rehab-seeded against noxious weeds. Therefore, the overall composition and cover typically is not affected.

Fire suppression is not expected to have an effect to vegetative composition and cover. This is due to the policy that suppression activities restore any Forest Service structures damaged by suppression activities. Effects of grazing with fire are addressed in the Fire/Fuels specialist report. Wildfire effects are evaluated after the event. Post fire the resources are considered and analyzed and activities depend upon the extent and severity of the burn. Vegetation composition and cover effects would be determined at that time. Since grazing may affect fine fuels, it may affect wildfire burn patterns (see Fire/Fuels specialist report). The change in vegetation cover and composition would likely stay about the same in site size and location. Composition might change relative to which species are fire tolerant versus those which increase without grazing.

Noxious weed treatments would continue on the allotment. Noxious Weed Best Management Practices (BMPs) would continue to be implemented in the grazing strategies. If grazing is permitted, the Early Detection Rapid Response (EDRR) measures may be completed by the permittee. There would also be more EDRR through Forest Service range inspections. Treating noxious weeds helps recover the desirable plant composition and cover in areas where weed populations are established as well as preventing noxious weeds from further displacing desirable plants in new sites. Overall, the Forest wide weed control measures, BMPs, and active permittee participation leads to desirable plant composition and cover in the analysis area.

Firewood gathering is likely to have little, to no, effect with grazing on understory vegetation composition or cover. Rarely, a wood cutter may fell a tree across a fence, corral, or trough. If this happens, sometimes the wood cutter fixes the fence. If not, and the permittees or Forest Service finds it, the structure would be repaired as soon as possible. The time from the event to the discovery may affect the grazing plan effectiveness short term, a couple of weeks to a month. The effect is likely minor given that a more important structure is likely to be discovered promptly or at the time of its use.

Road maintenance or culvert replacement, upgrade activities have little to no effect on grazing. The machinery could temporarily displace livestock for a brief time, usually less than one hour. It is not likely to displace them into areas they can't already access.

Within the last ten years, recreation-related uses have increased in the LeClerc Creek area. Recreation has been observed as having measureable impacts to riparian areas, which degrade and damage riparian resources and increase the amount of sediment in streams. The proposed action would act to lessen impacts to riparian areas from livestock grazing by encouraging riparian recovery and likely reducing the amount of time livestock spend in riparian areas. Due to recreation use combined with livestock use, some riparian areas and streams may demonstrate



characteristics that are less than their potential, but impacts to these areas are likely to be reduced by the proposed action compared to the existing condition.

Recreation use such as camping is also having an impact to primary range areas within the project boundary. Many of the homestead meadow sites, which are considered to be semi-permanent primary range areas are increasingly used as camping locations for Forest visitors. Use of these homestead meadows by campers is causing areas of soil compaction, which in turn reduces infiltration and productivity. Heavily used areas are also less desirable to livestock.

Livestock may affect traditional cultural use of the landscape by Native American Tribes, in particular the Kalispel Tribe (see Heritage Resources report for more information). The extent and location of traditional cultural properties (TCP's) within the LeClerc Creek Allotment are not well-known by the Forest Service, therefore determining the extent of these effects is difficult.

Continuing to permit the current number of livestock on the LeClerc Creek Allotment would allow for a sustained level of livestock production for the permittees, which equates to sustaining the local economy.

Continuing the permitting of livestock within the project area could have some impact on post-harvest regeneration rates of timber on NFS and private lands. Impacts to tree regeneration have been observed to be insignificant in dry, upland areas and therefore, the impact is likely minimal.

The activities in Alternative D would act to guide the LeClerc Creek Allotment to improved resource conditions while sustaining the current level of permitted livestock and AUMs. The acres of land suitable for grazing would increase to 5,913 acres from the existing condition of 5,452 acres. The 5,452 acres for the existing condition was developed by taking the total acres of suitable grazing for the existing allotment (6,693 acres) and subtracting 1,241 acres on the upper elevations of Molybdenite Ridge that receive little to no grazing use and therefore do not contribute greatly to the carrying capacity of the current allotment, despite meeting the criteria for being suitable for grazing.

### **Irreversible & Irretrievable Effects - All Alternatives**

There are no irreversible and/or irretrievable effects concerning range management or rangeland vegetation from the LeClerc Creek Allotment project. If grazing would continue to be authorized, health of upland and riparian vegetation would be maintained or improved through the proposed changes and additional range improvements, and there would be adequate forage to provide for wildlife needs. If grazing use were discontinued, health of upland and riparian vegetation would be expected to be maintained or improved as areas that formerly received pressure from livestock recover.

### **Design Criteria**

In implementing the proposed action, the following are considered design criteria.

1. The construction of all structural range improvements would be as directed by Forest Service General Technical Report PNW-GTR-250, September 1990. Where certain types of projects are not covered by this report or site specific locations cause difficulty with design characteristics, the Forest Range Specialist would be consulted.
2. Construction of range improvements would follow local Forest Service design criteria to meet the needs of wildlife, hydrology, heritage, and fisheries.

## **Effects Summary**

The LeClerc Creek Allotment would be beneficial to range management by producing upland foraging sites for livestock and wildlife to utilize through homestead meadow retention efforts. This forage would allow livestock to graze in upland sites and thereby have a reduced impact to riparian resources.

Developing off stream water developments to support livestock grazing would act to lessen associated impacts to water quality, stream banks and riparian vegetation since livestock preference is to drink from water troughs compared to streams. By providing for the construction of water developments in non-riparian areas livestock would not be accessing streams as much to drink, therefore bank trampling and stream widening would lessen.

The construction of fencing would act to protect streams and sensitive areas that are being impacted by livestock grazing. Improved riparian areas adjacent to streams would likely result in improved water quality in some locations, specifically Middle Branch LeClerc Creek.

Continued livestock grazing at current levels would act to sustain livestock numbers in the local area and provide input to the local economy.

The information included in this report is based on personal observation, scientific research, and knowledge of on-site conditions as well as through analysis of available current and historic data for the LeClerc Creek Allotment.

Cattle grazing on the LeClerc Creek Allotment is consistent with the Colville National Forest Land and Resource Management Plan (1988) and with Forest Service Manual section 2230 (Grazing and Livestock Use System).

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